GLOBAL HEALTH GOVERNANCE

THE SCHOLARLY JOURNAL FOR THE NEW HEALTH SECURITY PARADIGM
PEER REVIEWED, OPEN ACCESS JOURNAL

ISSN 1939-2389

GLOBAL HEALTH GOVERNANCE IS AN OPEN ACCESS, PEER-REVIEWED, ONLINE JOURNAL THAT PROVIDES A PLATFORM FOR ACADEMICS AND PRACTITIONERS TO EXPLORE GLOBAL HEALTH ISSUES AND THEIR IMPLICATIONS FOR GOVERNANCE AND SECURITY AT NATIONAL AND INTERNATIONAL LEVELS.

THE JOURNAL PROVIDES INTERDISCIPLINARY ANALYSES AND A VIGOROUS EXCHANGE OF PERSPECTIVES THAT ARE ESSENTIAL TO THE UNDERSTANDING OF THE NATURE OF GLOBAL HEALTH CHALLENGES AND THE STRATEGIES AIMED AT THEIR SOLUTION. THE JOURNAL IS PARTICULARLY INTERESTED IN ADDRESSING THE POLITICAL, ECONOMIC, SOCIAL, MILITARY AND STRATEGIC ASPECTS OF GLOBAL HEALTH ISSUES.

VOLUME X, NO. 1

SPECIAL ISSUE (SPRING 2016)

TABLE OF CONTENTS

EBOLA: IMPLICATIONS FOR GLOBAL HEALTH GOVERNANCE

Introduction:
Ebola: Implications for Global Health Governance

Joshua Busby, Karen A. Grépin and Jeremy Youde

In March 2014, the World Health Organization (WHO) was officially notified about cases of the virus in Guinea,[i] however, it was not until early August 2014 that the WHO declared the outbreak a Public Health Emergency of International Concern.[ii] As of February 17, 2016, there have been more than 28,000 cases of the disease and over 11,000 deaths.[iii]

A belated international response headed off worst case scenarios, but that effort was seen by many to have been too slow.[iv] While West Africa is now virtually Ebola-free, with occasional cases popping up now and then, the region's weak health infrastructure makes it susceptible to the recurrence of Ebola and other potential disease outbreaks.

The Ebola crisis has highlighted global disparities in health resources, both human and financial,[v] as well as the need to reform the global health governance system to be better able to respond to future outbreaks.[vi] And although Ebola is the most prominent disease to catch international attention, other outbreaks, such as the current cases of MERS and the Zika virus also pose important threats to global health governance.[vii]

There have been no less than six reviews that have tried to assess what went wrong during the Ebola crisis including one by Harvard/London School of Hygiene & Tropical Medicine, an independent panel commissioned by WHO itself, and a review by a special UN panel.[viii] Many of them point to the need for important reforms to both the WHO, the International Health Regulations, and wider system of global health. These recommendations include creating new politically-insulated offices and committees to assess health emergencies, establishing funds to permit rapid emergency responses, incentivizing states experiencing disease outbreaks to report to WHO in a timely manner, and creating financing facilities to encourage treatment and pharmaceutical research.[ix]

At the 2015 World Health Assembly meeting, some of these reforms were set in motion, namely creating a $100 million emergency response fund (funded by voluntary donations from member-states) and directing the Director-General to form and coordinate a global health emergency workforce. As Mackey and Clift note in their contributions to this issue, some of the major recommendations, including an increase in the assessed dues to the WHO, were explicitly rejected by member-states. This leaves the WHO with the perennial problem of being dependent on voluntary contributions from donors for their pet projects and priorities, leaving the essential functions of global health surveillance potentially underfunded.

WHO REFORM - DISAPPOINTING RECOMMENDATIONS

Despite the time and energy put into the various review efforts, the likelihood of seeing meaningful and far-reaching changes being implemented is negligible at best. Most of the recommendations offered by the review panels are either unworkable or unlikely to be implemented. Director-General Chan called for member-states to increase their assessed contributions by 5 percent. This would be the first increase in mandatory dues since the early 1980s, and it would give WHO significant fiduciary flexibility to set its own budgetary priorities. During the 2015 World Health Assembly, though, member-states rejected this modest increase in assessed contributions. While they did permit an increase in the organization's overall budget, they mandated that this rise be financed only through voluntary contributions.[x]

Another proposal called for the creation of a WHO Centre for Emergency Preparedness and Response to develop and coordinate efforts to address health emergencies. This would seemingly duplicate existing efforts and offices, both within and outside WHO, and add additional layers of bureaucracy without appreciably increasing the organization's response capabilities. It might give the appearance that the organization was "doing something," but it would likely complicate the ability to implement timely responses. Furthermore, many of the suggestions designed to increase WHO's emergency response capabilities proceed from a narrow definition. They prioritize responses to actual infectious disease outbreaks, but they neglect strengthening the underlying health systems themselves. In general, the recommendations themselves are not bad, but they may overlook the political context and fail to appreciate the processes by which any such reforms would actually be implemented.

Particularly absent is a serious discussion of strengthening underlying health systems. These, and not an emergency operations fund or a rapid deployment of health workers, are the real first lines of defense against the emergence and spread of an infectious disease outbreak. The crisis has been seen as a failure of the global community to provide sufficient support of strengthened health systems and has led to calls for Universal Health Coverage, but as Harman argues below this movement has not been privileged in the past relative to other priorities and is unlikely to generate sufficient political priority going forward to make any meaningful change. McCollum and Taegtmeyer's perspective supports this argument in that a previously devastating outbreak of cholera in Sierra Leone led to similar calls but that the lessons from that outbreak were largely ignored and that led to the same mistakes being repeated again this time around.

WHO LEADERSHIP TRANSITION

Margaret Chan's second five-year term as Director-General will expire in 2017, and the selection of the organization's next leader will say much about its future trajectory.[xi] Chan has received significant criticism for her failure to bolster the organization's legitimacy. Given how dependent WHO is on voluntary contributions, it faces a perilous future unless it can convince the international community that it possesses the authority and legitimacy to effectively coordinate and lead responses to the health concerns facing the world. The next director-general must inspire confidence, demonstrate a level of political savvy, and maintain the trust of a sprawling organization whose effectiveness is dependent upon the good relations between the central office in Geneva and the six autonomous regional offices.

Like other UN specialized agencies, WHO follows an informal process of regional rotation in selecting its leadership. All of the Director-Generals since 1973 have come from either Asia or Europe, so there may be strong pressure to select someone from Africa or Latin America. Michel Sidibé, the executive director of UNAIDS, and Awa Coll-Seck, the Senegalese Minister of Health and executive director of the Roll Back Malaria Partnership, have both been mentioned as possible candidates. Another person whose named has been mooted who has expertise and credibility is Agnes Binagwaho, Rwanda's Minister of Health. There may be a desire for someone with more experience in politics in the hopes that that person could have more influence with government officials in member-states, particularly with donors. Graçea Machel, who chairs the Partnership for Maternal, Newborn, and Child Health and who has chaired the GAVI Alliance Board, might be an intriguing choice with such stature.

Whoever is appointed to lead the organization going forward, that person has to make the case to the international community that WHO merits more regular and reliable sources of funding for the core functions like disease surveillance and early warning that only a global organization can carry out. At the same time, WHO's new leader needs to make the case that global investments in health systems strengthening beyond West Africa are necessary to ward off the next possible global pandemic. If past experience is any guide, these sorts of reforms and legitimacy rebuilding require a leader who both possesses a level of comfort with the dynamics of global public health and has the political savvy to work with policymakers from around the world to acquire more core contributions to WHO's budget. Finding both in a single leader can be tricky, but it is not impossible. Gro Harlem Brundtland, who served as Director-General between 1999 and 2003 and had a medical background before entering electoral politics, may be the model for what the World Health Organization needs in a leader over the next five years.

The urgency of this has been underscored by the rapid emergence of the Zika virus. Zika went from an obscure mosquito born virus affecting Brazil to being declared

by the WHO a Public Health Emergency of International Concern (PHEIC) in February 2016, because of the disease's rapid spread throughout the Americas and its association with microcephaly, a birth defect affecting the head and brain size of babies in the womb.[xii]

Beyond health systems strengthening, the Zika crisis underscores the need for finance for health technologies for emergent global health threats. The Flannery et al. contribution to this volume provides a set of criteria by which to think about which health threats should receive priority finance. They focus on those that are easily transmissible through the air or through human-to-human contact, that could kill large numbers of people, and for which there are market failures that impede technology creation in the absence of public action. Interestingly, Zika, because it does not kill large numbers and is largely transmitted by mosquitoes, would not fulfill their criteria, though birth defects arguably provide a reason for its inclusion but potentially opens up demands for finance for many other insect-borne diseases.

THE SPECIAL ISSUE

In this special issue, we bring together academics and experts to think critically about what the Ebola outbreak and the response to it tell us about global health governance and its future. The authors take on a variety of different elements, looking at the International Health Regulations, the role of regional organizations, encouraging international cooperation on health emergencies, the role of the military, and the lessons we can learn from other disease outbreaks. We put forward no specific answers, and we took a decidedly catholic approach to this issue, but we aim to generate discussion and deep thinking about what the international community can learn from this outbreak so that it does not repeat the same mistakes and shortcomings in the future.

Sophie Harman - "Norms won't save you: Ebola and the norm of global health security"

In this commentary, Sophie Harman argues that stronger norms in support of the International Health Regulations (IHR) would not necessarily have prevented the Ebola crisis nor would they shield the world from future crises. She notes that norms exist in a global hierarchy of other normative commitments and that some are more resourced than others. For example, efforts to supply anti-retroviral drugs were also championed by norms entrepreneurs, and that campaign has generated significant flows of resources to support universal access, a material sign of its status in the hierarchy of global norms. Other norms-driven health causes such as the Millennium Development Goals and polio eradication also are privileged relative to support for IHR compliance. The WHO, she argues, is too weak to generate political (and therefore material) support for health

systems strengthening, at the heart of IHR compliance, leading to the conclusion that norms won't save people suffering in health crises.

Andrew Price-Smith and Jackson Porreca - "Fear, Apathy, and the Ebola Crisis (2014-15): Psychology and Problems of Global Health Governance"

Price-Smith and Porreca offer a unique perspective on the problems facing global health governance structures by adding a psychological component to the equation. The institutional impediments that block a more effective response to global health emergencies, they argue, arise out of what they term the "fear/apathy cycle." Epidemic outbreaks breed a high degree of fear, which leads to inappropriately draconian policies and ostracization of those afflicted. When the emergency passes, though, the international community retreats into a sense of complacency. We lurch between the extremes of responses rather than finding some sort of consistent vigilance that would provide the global health governance architecture with the strength and resilience necessary to respond to any unforeseen emergencies. Their argument suggests that many, if not all, of the reform proposals being put forward to improve future responses to disease outbreaks will have little purchase because they fail to address this underlying psychological conundrum.

Charles Clift - "Ebola and WHO Reform"

Drawing on his extensive experience working with governments and international organizations on global health matters, Clift's commentary highlights structural flaws within the World Health Organization. In particular, he focuses on the complications that emerge from having a lead organization simultaneously coexist with strong, autonomous regional organizations. One of the key flaws in WHO's Ebola response was the failure of cooperation between WHO's central headquarters in Geneva and the Regional Office for Africa. Looking at the various reform proposals that have come out so far, he laments the fact that they fail to resolve this underlying tension and instead attempt to bypass the structures altogether. He raises a question that few member-states appear willing to address: does WHO's decentralized structure inhibit the organization's ability to be effective?

Maryam Deloffre - "Human Security Governance: Is UNMEER the Way Forward?"

In her article, Deloffre explores the differences between a traditional state-centric response to security and a human security one. She then analyzes the extent to which the UN Mission for Ebola Emergency Response (UNMEER) constituted one form or another. Human security responses tend to be people-centric and focus on a wider range of threats than state security approaches, bringing in a wider number of actors

through bottom-up processes of consultation than top-down state security efforts. UNMEER facilitated an unprecedented array of cooperative activities, but Deloffre argues that the specific health security frame conformed to more traditional state-centric notions that made coordination more of a challenge and that perhaps foreclosed some bottom-up measures that could have ameliorated impacts on vulnerable populations and brought human rights concerns more to the fore.

Timothy Mackey - "Lessons from Liberia: Global Health Governance in the Post-Ebola Paradigm"

In this commentary, Mackey examines the experience of Liberia in confronting the Ebola crisis and the implications for the WHO, the International Health Regulations, and global health governance going forward. He concludes that the Inter-Agency Health Team, a multi-stakeholder partnership, was quite helpful in coordinating the response between Liberia's government, different actors in the U.S government, and the WHO. However, this mechanism was created as an ad hoc response, lacking a formal process for generating such partnerships if needed in the future. Liberia's weak health system made the country vulnerable to Ebola, and insufficient support from the WHO for IHR compliance did not shore up this weakness. Mackey concludes the piece with five important reflections and observations on progress (1) on the need for a more flexible WHO budget with resources for emergencies, (2) that WHO's decentralized structure needs remedies that do not appear to be on the agenda as yet, (3) that the criteria for declaring a PHEIC be revised including a possible intermediate alert, (4) that more resources and attention be paid to compliance with the IHR, particularly on disease detection, reporting, and rapid response, and (5) finally, that resources be made available for an emergency workforce that can be tapped as needed.

Rosalind McCollum and Miriam Taegtmeyer - "Let's not make the same mistake again: A political economy analysis of Sierra Leone's Cholera and Ebola epidemic responses"

McCollum and Taegtmeyer draw parallels between the Ebola outbreak and a recent outbreak of cholera that infected over 25,000 people in Sierra Leone (and bordering Guinea) in 2012. Using a political economy issue analysis, they identify structural issues that were common to both outbreaks. While they identify weak health systems as a key factor that led to both epidemics, McCollum and Taegtmeyer argue that many of these issues were related to structural weaknesses, such a weak public management system and a lack of trust of citizens, within the health system rather than simply a low level of total resources to support the health system. To learn from these lessons, they argue that the government needs to find ways to better engage with communities and to strengthen accountability for health service delivery.

Jessica Flannery et al. - "A Process for Defining Priority Diseases for a Research and Development Financing"

Flannery et al. note that until the 2015 crisis, the Ebola virus received insufficient attention in terms of disease diagnostics and therapeutics. There have been calls for the creation of an international financing facility that might generate health technologies for diseases in the future. She and her colleagues identify the criteria that would make a disease eligible for inclusion in the financing facility's purview, namely that there are (1) high fatality rates, (2) the disease is easily transmissible, and (3) that there are insufficient market incentives to provide technologies because the disease disproportionately affects communities with low purchasing power and in cyclical outbreaks. In their review of a variety of lists of diseases, Flannery et al. conclude that in addition to Ebola, the diseases in scope for inclusion are the Machupo virus, Marburg, MERS, the Nipah virus, and SARS. These criteria would largely exclude neglected tropical diseases and a number of other diseases such as dengue and Chikungunya.

Alexandra Kaasch - "The Ebola crisis and health systems development"

Kaasch analyzes the early donor contributions to the Ebola outbreak and notes that while there is nearly universal agreement that weak health systems contributed to the outbreak and that many high level declarations have been made about the importance of strengthening health systems, most of the aid provided to heavily affected countries in the immediate aftermath of the outbreak likely did very little to support health systems in the long run. She argues that current donor support mechanisms are likely inadequate to deal with health system strengthening needs and instead argues that new financing structures, which could operate at different levels are more likely to be successful in addressing future threats.

Joshua Busby *is an Associate Professor at the LBJ School of Public Affairs at the University of Texas-Austin and is a distinguished scholar at the Strauss Center for International Security and Law.*

Karen Grépin *is an Assistant Professor of Global Health Policy at New York University.*

Jeremy Youde *is a fellow and senior lecturer in the Department of International Relations in the Coral Bell School of Asia Pacific Affairs at the Australian National University.*

[i] WHO-AFRO. 2014. "Ebola Virus Disease in Guinea." http://www.afro.who.int/en/clusters-a-programmes/dpc/epidemic-a-pandemic-alert-and-response/4063-ebola-virus-disease-in-guinea.html.
[ii] Gostin, Lucey D, and Phelan A 20 Gostin, Lawrence, Lucey D, and Phelan A. 2014. "The Ebola Epidemic: A Global Health Emergency." JAMA 312 (11): 1095–96. doi:10.1001/jama.2014.11176.
[iii] CDC. 2016. "Ebola (Ebola Virus Disease): Previous Case Counts." March 1. http://www.cdc.gov/vhf/ebola/outbreaks/2014-west-africa/previous-case-counts.html.
[iv] Grépin, Karen A. 2015. "International Donations to the Ebola Virus Outbreak: Too Little, Too Late?" BMJ 350 (February): h376. doi:10.1136/bmj.h376.
[v] Fauci, Anthony S. 2014. "Ebola — Underscoring the Global Disparities in Health Care Resources." New England Journal of Medicine 371 (12): 1084–86. doi:10.1056/NEJMp1409494.
[vi] Sridhar, Devi, and Chelsea Clinton. 2014. "Overseeing Global Health." Finance and Development 51 (4).
[vii] Youde, Jeremy. 2015. "MERS and Global Health Governance." International Journal: Canada's Journal of Global Policy Analysis 70 (1): 119–36. doi:10.1177/0020702014562594.; Tavernise, Sabrina, and Donald G. McNeill Jr. 2016. "Zika Virus a Global Health Emergency, W.H.O. Says." The New York Times, February 1. http://www.nytimes.com/2016/02/02/health/zika-virus-world-health-organization.html.
[viii] Moon, Suerie, Devi Sridhar, Muhammad A Pate, Ashish K Jha, Chelsea Clinton, Sophie Delaunay, Valnora Edwin, et al. 2015. "Will Ebola Change the Game? Ten Essential Reforms before the next Pandemic. The Report of the Harvard-LSHTM Independent Panel on the Global Response to Ebola." The Lancet 386 (10009): 2204–21. doi:10.1016/S0140-6736(15)00946-0.. Efforts include the WHO's Ebola Interim Assessment Panel, the UN's High-level Panel on the Global Response to Health Crises, the WHO's Review Committee on the Role of the International Health Regulations (2005) in the Ebola Outbreak and Response, the WHO's Advisory Group on Reform of WHO's Work in Outbreaks and Emergencies with Health and Humanitarian Consequences, and the Global Health Risk Framework Commission of the National Academy of Medicine (WHO. 2015. "Report of the Ebola Interim Assessment Panel - July 2015." WHO. http://www.who.int/csr/resources/publications/ebola/ebola-panel-report/en/.; United Nations. 2016. "Protecting Humanity from Future Health Crises Report of the High-Level Panel on the Global Response to Health Crises." http://www.un.org/News/dh/infocus/HLP/2016-02-05_Final_Report_Global_Response_to_Health_Crises.pdf.; Davies, Sally C, Somsak Akksilp, Keizo Takemi, Precious Matsoso, and Jarbas Barbosa Da Silva. 2016. "The Future Leadership of WHO." The Lancet 387 (10016): 321–23. doi:10.1016/S0140-6736(16)00105-7.; Dzau, Victor J., and Judith Rodin. 2015. "Creating a Global Health Risk Framework." New England Journal of Medicine 373 (11): 991–93. doi:10.1056/NEJMp1509136.). For a review of these various efforts, see Clift this volume as well as (Gostin 2015b).
[ix] For some academic reviews of WHO's failures during the Ebola crisis, see (Busby, Joshua, and Karen A. Grépin. 2015. "What Accounts for the World Health Organization's Failure on Ebola?" PS: Political Science & Politics 48 (01): 12–13. doi:10.1017/S1049096514001851.; Youde, Jeremy. 2015 "The World Health Organization and Responses to Global Health Emergencies." PS: Political Science & Politics 48 (01): 11–12. doi:10.1017/S1049096514001851.; Youde, Jeremy. 2014. "Can the World Health Organization Lead? Do We Want It To?" The Washington Post, August 8. https://www.washingtonpost.com/news/monkey-cage/wp/2014/08/08/can-the-world-health-organization-lead-do-we-want-it-to/.; Kamradt-Scott, Adam. 2016. "WHO's to Blame? The World Health Organization and the 2014 Ebola Outbreak in West Africa." Third World Quarterly 0 (0): 1–18. doi:10.1080/01436597.2015.1112232.).
[x] Garrett, Laurie. 2015. "The Ebola Review, Part I." Foreign Policy. June 6. https://foreignpolicy.com/2015/06/06/ebola-review-world-health-organization-g-7-merkel/; Garrett, Laurie. 2015. "The Ebola Review, Part II." Foreign Policy. June 6. https://foreignpolicy.com/2015/06/06/ebola-review-part-ii-g-7-merkel-world-health-organization/; Gostin, Lawrence. 2015. "Critical Choices for the WHO after the Ebola Epidemic." JAMA 314 (2): 113–14. doi:10.1001/jama.2015.6940.
[xi] Davies, Sally C, Somsak Akksilp, Keizo Takemi, Precious Matsoso, and Jarbas Barbosa Da Silva. 2016. "The Future Leadership of WHO." The Lancet 387 (10016): 321–23. doi:10.1016/S0140-6736(16)00105-7.
[xii] Tavernise, Sabrina, and Donald G. McNeill Jr. 2016. "Zika Virus a Global Health Emergency, W.H.O. Says." The New York Times, February 1.; Lucey, Daniel, and Lawrence Gostin. 2016. "The Emerging Zika Pandemic: Enhancing Preparedness." JAMA 315 (9): 865–66. doi:10.1001/jama.2016.0904.

Norms won't save you:
Ebola and the norm of global health security

Sophie Harman

If the 2014 Ebola outbreak in Guinea, Liberia and Sierra Leone tells us anything about global health politics, it is that there is a distinct difference between normatively agreeing to act on an issue (in this case a public health emergency of international concern) and the will or ability to act. One point of agreement across the range of actors in global health is that the 2014 Ebola outbreak was a crisis that could and should have been prevented. Structures and processes had been created at the global level of health governance to help states and non-state actors report outbreaks of infectious diseases such as Ebola. Members of the World Health Organisation (WHO) had committed to a new system of disease outbreak preparedness through the 2005 International Health Regulations (IHR2005). The boom time of global health financing from 2000 - 2010 had afforded health a priority position in many low and middle-income countries. For some the combination of commitment to the IHR2005 and the boom in financing had created a new normative agenda within global health in which institutions such as the WHO could harness to secure the health of the world's population.[1] However, come the 2014 Ebola outbreak, such normative commitment appeared to be an empty gesture for Guineans, Liberians and Sierra Leoneans. This short commentary argues that events in West Africa demonstrate that norms are not enough to promote global health security because they exist in a system of global health governance that is defined by a financially-incentivised hierarchy of norms and institutional weakness of norm custodians. These two issues demonstrate normative agendas as political processes that have more to do with institutional finance and donor state priorities than a collective will to act.

NORMS, GLOBAL HEALTH GOVERNANCE AND IHR 2005

For many scholars social norms have become the key drivers of global health governance. These social norms range from health-as-security that have underpinned the IHR2005 process,[2] health-as-foreign-policy,[3] and the right to health.[4] Combined, these norms have driven an increase in development assistance to health, led to a range of institutional partnerships, and the consolidation of soft and hard legal commitments to the improvement of mental and physical health.[5] Following a social constructivist logic, processes of global health governance have been understood through the lifecycle of norms: norms are formed by a confluence of social, political and economic factors, key individuals or an institutional norm entrepreneur; norms are then debated, adopted and embedded within a key institutional actor such as the WHO that then cascade the norm to member states, partners and key personnel within the institution. The lifecycle of norms is mutually reinforcing by a range of actors until it is adopted into their everyday practices and policy processes.

Norms and the impact of the norm lifecycle has become a dominant means of explaining the reform of the IHRs in global health governance. Here the norm of health

security emerged from the entrepreneurship of key actors within the WHO, and reached a tipping point in the aftermath of SARS.[6] IHR2005 encompass the 'new norms of global health security'[7] in which member states acknowledge their obligations and responsibilities to provide health security in a globalised world and the need for a collective outbreak response.[8] Attached to the normative commitment is a set of core requirements for all member states to adopt with regard to building state capacity,[9] outbreak detection, confirmation and notification, provision of public health assistance, and port authority control and assistance.[10] The purpose of which is to identify, detect and act on a potential threat to global health security, preferably before it becomes a public health emergency of international concern. In short, the intention of IHR2005 was to minimise the risk of disease outbreaks to global health security. However, nearly ten years on from IHR2005, such normative commitment was found wanting when it came to Ebola in West Africa.

EBOLA AND TWO PROBLEMS WITH NORMS

Much of the commentary on the failings of the Ebola response has concentrated on IHR2005 and the need to strengthen the normative commitment to health security in global health governance.[11] The logic here is if implemented correctly and if states showed a full normative commitment, IHR2005 would work as intended and disease outbreaks would be containable rather than devastating. The emphasis here is to embed norms around global health security in structures of global health governance as a means of generating greater normative commitment that will in turn lead to state action. However, such an emphasis overlooks two outstanding problems with the politics of global health: norm hierarchies and the weakness of global norm custodians such as the WHO.

The first problem with norms, that the Ebola outbreak brought to light, is that norms exist within a hierarchy. Not all norms have equal value or importance within the wider system of global health governance or international relations. There are a number of issues or priorities that global institutions and states should act on – for example, hunger, maternal mortality, torture – however political-economic factors shape how and why states do or do not act in these areas. Global health encompasses a range of issues that are important and arguably many individuals, states, and institutions (to a greater or lesser extent) agree should be acted on even if they are not the ones to do so. IHR2005 compete with normative commitments to a range of disease-specific issues such as those associated with the UN Millennium Development Goals (MDGs) – reduce child mortality, reduce maternal mortality, and combat HIV/AIDS and other diseases – and those prioritised by high-profile eradication campaigns such as Polio. These issues attain greater value and normative commitment than IHR2005 in global health governance partly because they pre-date the reform of the IHRs, but mainly because of the financial commitment attached to such issues. Money and development assistance for health creates a hierarchy of norms within global health governance: states – principally low and middle income states – ascribe greater value, and thus prioritise, those norms that come with financial assistance. While states may commit to wider global health norms such as IHR2005, these norms do not transfer into action unless, first there is finance attached to them, and second, such finance is commensurate with or exceeds financial commitment to other normative concerns. In the hierarchy of global

health norms, IHR2005 core capacities occupy a position beneath the MDG health goals and high-profile eradication campaigns because there is not the commensurate financial incentive to transfer commitment into action. As Davies et al argue, consistently the WHO reports suggest that compliance with the IHR2005 is a big problem, particularly in the Africa and Asia-Pacific regions.[12] Findings from the WHO's 2013 IHR Core Capacity Implementation Survey suggests that states in the Africa region are either unable to provide data on compliance or fail to meet the 75-100% progress target in any of the core capacity areas.[13] In the hierarchy of global norms, global health does not take priority and is quite low on the foreign policy agenda of most states, with issues such as international finance, trade, human rights, conflict and peace-building all taking precedence.

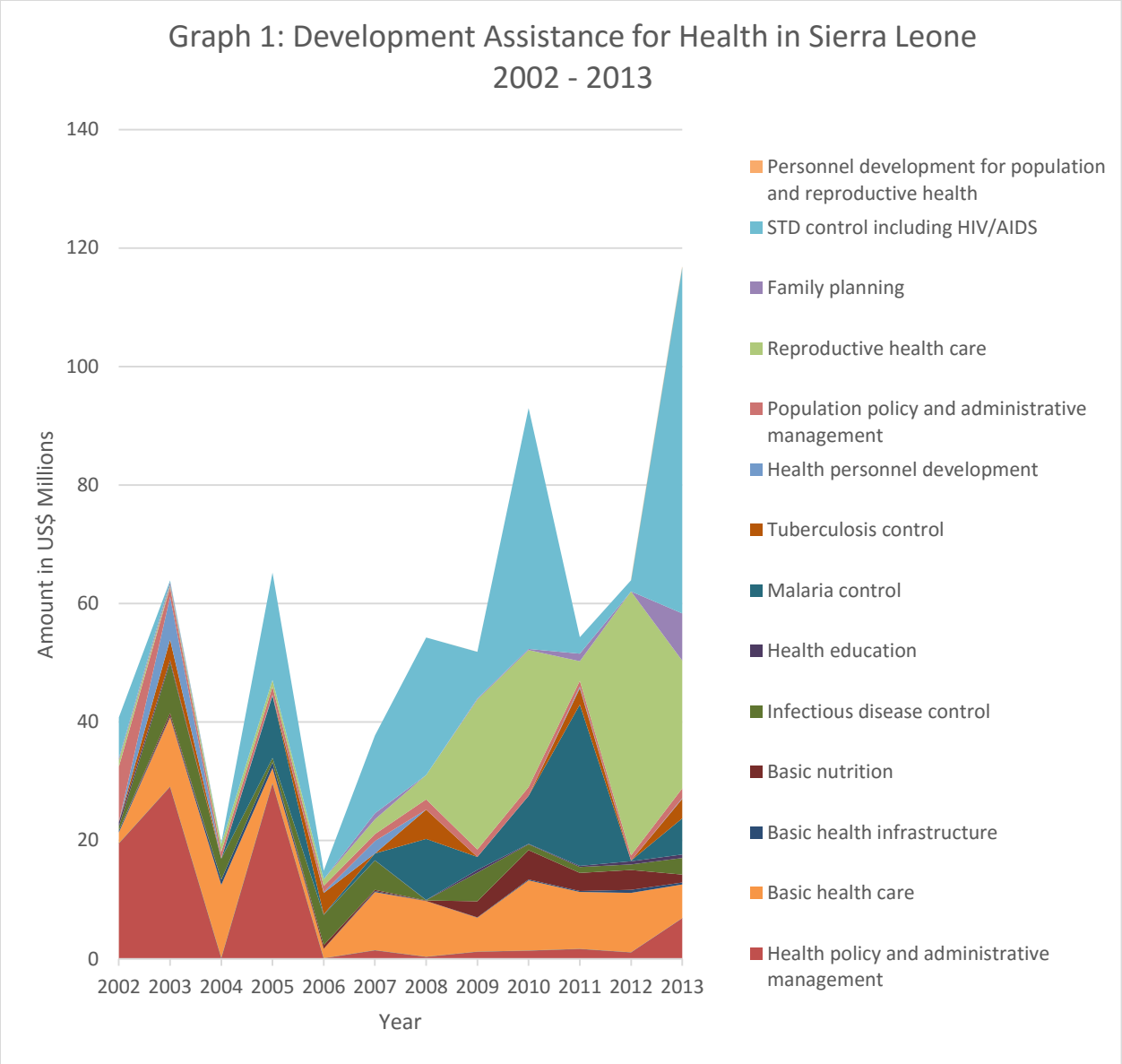
As signatories to the MDGs, Guinea, Liberia and Sierra Leone all prioritised the three health goals within their health sector over pandemic preparedness and health system strengthening. This is not because these three countries did not value pandemic preparedness and health systems but because of the low level of development assistance for health in these areas.[14] As low income, aid-dependent states, the health sectors of these countries are dependent on the priorities of health donors and therefore lack the funds to develop the health sector beyond international priorities.

Domestic health sectors have a degree of agency in setting their own agendas but this exists in a narrow and poorly funded policy space. The three MDG goals have received significant financing from global health actors and thus shaped health sector planning in these countries. As the example of Sierra Leone represented in Graph 1 demonstrates, the majority of development assistance to health between 2002-2013 was allocated to HIV/AIDS and reproductive health.

Hence it is deeply concerning, but not unsurprising that when the Ebola outbreak happened there was a lack of health sector capacity despite these countries being signatories to the IHR2005. Normative commitment to the notion that everyone has a common interest in global health security is all well and good, but it gains little traction in a finance-driven hierarchy of global health norms.

Norm hierarchies are defined by where development assistance to health is channelled, and crucially the priorities of the high-income states that provide the aid. International donors finance vertical, disease-specific health issues over horizontal health surveillance systems for a variety of reasons. First, the norm of the MDGs takes priority over IHR2005 in the wider hierarchy of international norms and thus most attention to health is organised around the three health-related goals. Second, while building health system and surveillance capacity in developing countries promotes global health security in the long term, it is a harder sell to domestic populations with regard to their perceptions on immediate threats to state and individual security. Third, health security has been used as a justification for action on a variety of health issues to the point that it has become an empty rhetorical device for eliciting normative state action in high income countries. Finally, development assistance is increasingly attached to performance measurement indicators which can be more clearly articulated and achieved in vertical health programmes. It is international donors that privilege certain norms over others and thus it is these states that shape norm hierarchies.

Source: OECD/QWIDS Aid Data: Development Assistance for Health Sierra Leone 2002 – 2013.



The second problem with global health norms has to do with the agency of the norm custodians in not only setting but delivering on normative agendas. The WHO is arguably the central agent for ensuring the norm of global health security through the adoption and implementation of IHR2005. However, the Ebola response showed how weak the WHO is as a custodian and promoter of the norm. As an agent responsible for providing and diffusing the norm of global health security through IHR2005, the WHO failed to assist low and middle income countries in developing the capabilities needed for effective health systems and pandemic preparedness. The WHO had a role to facilitate high income country spending in this area in-keeping with the IHR2005 agreement but failed to create the policy space to deliver this normative agenda. This was in part because of the hierarchy of norms as discussed above, but also in part because of the lack of confidence in the WHO to deliver on this agenda by member states.[15]

The WHO was slow to act on Ebola, showed lack of communication between headquarters and the infected African states, and had little in-country or international presence in leading the response as one would expect from the supposedly lead institution in global health.[16] The WHO has recognised this.[17] Part of the problem with Ebola was over who had the responsibility and will to act. Throughout the early stages of the Ebola response there was a shift in blame and responsibility between global actors and between international institutions and the state. Everyone agreed that someone should do something to protect the norm of global health security but the actor with the responsibility to do so – the WHO – did not act. The fumbled response of the WHO suggested that the norm of global health security was weak in the very institution in which it was established. This sent a contradictory message to the wider global health community and member states that the WHO was dependent on to finance and assist with the outbreak. For the WHO, the inability to act on Ebola was in part a collective action problem – it needed to respond to and work with member states in the response. However, there was (albeit delayed) political will to act by some of the main powers in contemporary global politics – the United States and China – and through global financing mechanisms – the World Bank and the Bill and Melinda Gates Foundation. The problem here was not collective action, the problem was concern over collective action *through* the WHO as it had shown little political will to act on the norm and, as a consequence, lost the support, trust and confidence of member states and partner institutions in both the institution and the norm of global health security.

CONCLUSION: NORMS WON'T SAVE YOU

The flawed global response to Ebola 2014 shows that norms alone are not enough to deliver global health security. The problematic Ebola response highlights two limits to the power of norms in global health governance: the hierarchy of competing norms in global health where norms are given value through financial assistance, and the weakness of institutional norm custodians in delivering on their own agenda. Defenders of the response to Ebola frame it as a classic collective action problem of devolved responsibility and the reliance of international institutions on member state action: however Ebola was different in that, albeit delayed, key states and institutions did demonstrate a will to act and to do so separately from the custodian of the norm of global health security, the WHO. Normative commitment to global health security is undermined when the very institution that is seen to have created the norm shows little political will to safeguard it. Norms alone will not save people from diseases such as Ebola: political will to act, financial assistance for delivering health security, and institutional leadership that is not afraid to admit to mistakes will.

Sophie Harman *is Reader in International Relations in the School of Politics and International Relations, Queen Mary University of London.*

[1] See for example Gostin, Lawrence. (2014). *Global Health Law* London: Harvard University Press; Gostin, Lawrence, Sridhar, Devi., and Hougendobler, David. (forthcoming 2015) 'The normative authority of the World Health Organisation' *Public Health*

http://scholarship.law.georgetown.edu/cgi/viewcontent.cgi?article=2510&context=facpub (accessed September 2015).

[2] Wilson, Kimanan., von Tigerstorm, Barbara., and McDougall, Christopher (2008). 'Protecting global health security through the International Health Regulations: requirements and challenges' *Canadian Medical Association Journal* 179(1): 44-48; Kamradt-Scott, Adam. (2015). *Managing global health security: the World Health Organization and Disease Outbreak Control* Basingstoke: Palgrave MacMillan

[3] Fidler, David. (2007). 'Reflections on the revolution in health and foreign policy' *Bulletin of the WHO* 85: 243-244.

[4] Ooms, Gorik. and Hammonds, Rachel. (2012). 'Global Governance of Health and the Requirements of Human Rights' *Global Policy* 3(4): 476-479; Hammonds, Rachel and Ooms, Gorik. (2014). 'The emergence of a global right to health norm – the unresolved case of universal access to quality emergency obstetric care' *BMC International Health and Human Rights* 14(4).

[5] Gostin, Lawrence O. (2014). *Global Health Law* London: Harvard University Press

[6] Kamradt-Scott, Adam. (2015). *Managing global health security: the World Health Organization and Disease Outbreak Control*

[7] Davies, Sara E, Kamradt-Scott, Adam, and Rushton, Simon. (2015). *Disease Diplomacy: International norms and global health security* Baltimore: John Hopkins University Press

[8] WHO. (2015). 'About IHR' http://www.who.int/ihr/about/en/ (accessed March 2015).

[9] 'State capacity' here refers to the definition in the IHR2005, which refers to the ability of states to detect, assess and report public health emergencies, see WHO. (2005). *International Health Regulations (2nd Edition)* Geneva: WHO http://whqlibdoc.who.int/publications/2008/9789241580410_eng.pdf?ua=1 (accessed September 2015).

[10] WHO. (2005). *International Health Regulations (2nd Edition)* Geneva: WHO http://whqlibdoc.who.int/publications/2008/9789241580410_eng.pdf?ua=1 (accessed June 2015).

[11] Gostin, Lawrence. O. (2014). 'Ebola: towards an international health systems understanding' *The Lancet* 384 (9951); Gostin, Lawrence, O. and Friedman, Eric A. (2014). 'Ebola: a crisis of global health leadership' *The Lancet* 384 (9951); 'Editorial: Ebola: what lessons for the International Health Regulations?' *The Lancet* 384 (9951): 1321, 2014.

[12] Davies, Sara E, Kamradt-Scott, Adam, and Rushton, Simon. (2015). *Disease Diplomacy: International norms and global health security* Baltimore: John Hopkins University Press, p126-135

[13] WHO. (2013). *IHR2005: Survey of states parties 2013 report on OHR core capacity implementation* http://apps.who.int/iris/bitstream/10665/145084/1/WHO_HSE_GCR_2014.10_eng.pdf?ua=1 (accessed September 2015).

[14] The vertical/horizontal funding debate is explained in detail in Harman, Sophie (2012). *Global Health Governance* London: Routledge, chapter 5

[15] Lack of confidence in the ability of the WHO has been a problem over the last thirty years, this is clearly set out in Lee, Kelley. (2009) *The World Health Organisation* Routledge: London, and Clift, Charles. (2013) *The Role of the World Health Organization in the International System* London: Chatham House https://www.chathamhouse.org/sites/files/chathamhouse/public/Research/Global%20Health/0213_who.pdf

[16] Youde, Jeremy. (2015). 'The World Health Organisation and responses to global health emergencies' *Political Science and Politics* 48(1):11-12; Busby, Joshua and Grépin, Karen A. (2015). 'What accounts for the World Health Organisation's failure on Ebola?' *Political Science and Politics* 48(1):12-13

[17] WHO. (2015). 'WHO leadership statement on the Ebola response and WHO reforms' http://www.who.int/csr/disease/ebola/joint-statement-ebola/en/ (accessed June 2015).

Fear, Apathy, and the Ebola Crisis (2014-15): Psychology and Problems of Global Health Governance

Andrew Price-Smith and Jackson Porreca

INTRODUCTION

In March 2014 an 18 month-old boy died of the Ebola Zaire virus in the town of Meliandou, Guinea, near the porous borders of Sierra Leone and Liberia. The virus would soon spread inexorably throughout these three nations, moving from rural areas to the major cities, and rapidly overwhelming the health care system in these nations. The Ebola epidemic also constituted a significant threat to governance in the affected polities, and the chaos that the virus generated was ultimately deemed to be a threat to national security by policy elites in the region, and to international security by powerful actors including the USA and the United Nations Security Council. The Ebola epidemic of 2014-15 also generated considerable socio-political destabilization throughout West Africa. From the index case in Guinea the contagion spread rapidly throughout West Africa, and thereafter it generated a sub-epidemic in Nigeria (20 cases), sparked minor outbreaks in Mali, Senegal, and resulted in small clusters of cases in Spain and the USA. While the international spread of the virus has now been largely contained, the diffusion of cases to Europe and North America illustrates the complexities of global health in the age of complex interdependence. As of September 9, 2015, the international community had witnessed 28,141 cases of Ebola, and circa 11, 291 deaths attributed to the virus.[i]

Problematically, the virus appears to be endemic to portions of sub-Saharan Africa, a zoonosis that appears to exist in reservoirs of bats that range in a belt from West Africa through the DRC over to Uganda.[ii] Thus, Ebola cannot be 'eradicated' from the region in any conventional sense of the term, and one may reasonably expect sporadic epidemics of the virus in the years to come.

The epidemic revealed many cracks in the systems responsible for global health governance. We argue that persistent problems in global health governance emanate from psychological processes that often affect structural and institutional responses, processes revealed in the Ebola epidemic of 2014-15. Specifically, we argue that effective political responses to contagion are often limited by the Fear/Apathy Cycle, an incessant oscillation between fear-induced (and often draconian) responses to emergent pathogens, and subsequent periods of apathy wherein policy makers (and civil society) become excessively sanguine about threats to public health. We argue that the Fear/Apathy Cycle contributed to the deficient initial response of many international organizations (particularly the World Health Organization), and that the Cycle also contributed to profound problems of governance within affected states during the Ebola epidemic of 2014-15.

THE FEAR/APATHY CYCLE

Fear and other powerful affective states tend to overwhelm the rational centers of the mind.[iii] Thus, people frequently exhibit highly irrational responses to epidemic disease, driving them to engage in behavior ranging from denial, to hoarding, to rioting and violence. Humans seem to display a perennial psychological oscillation in their attitudes towards epidemic disease; exhibiting long periods of apathy towards

the microbial realm (and global health preparedness), only to be followed by affect-induced panic and despair when an epidemic finally manifests among us. Ultimately, as the epidemic in question abates, the level of fear declines and is once more replaced by a widespread state of apathy. It is interesting then, that the influence of psychology, and particularly the influence of emotion (particularly fear), has received so little attention in the scholarship on global health governance. As such, we propose a new agenda regarding the effects of psychology upon global health governance, with particular application to political responses to epidemics.

As a defining characteristic of the international system, anarchy has often contributed to fear of the 'other,' particularly as one could not know the intentions of the other. The history of international relations is replete with references to fear, and the powerful and negative effects that such emotion can have upon decision-making. Thucydides argued that it was Spartan fear of the rising power of Athens that ultimately led to the Peloponnesian War.[iv] Similarly, the superpowers' mutually expressed fears of the other led to the destructive era of the Cold War. This was expressed by the political scientist Thomas Schelling who wrote that fear of the 'other' could result in disastrous consequences that neither party desired.[v] This fear reached its zenith during the Cuban Missile crisis of October 1962 wherein the world faced the specter of nuclear annihilation at the hands of the superpowers.[vi] In the domain of theory, Herbert Simon began to question the orthodoxy of rational decision-making by policy elites during the 1950s.[vii] The political scientist Robert Jervis questioned the orthodox narrative of decision-maker rationality in the mid-1970s, arguing that perception and misperception could alter political calculations, but also arguing that affective states (i.e. emotions) could alter elite decision-making in a negative fashion.[viii] During the 1990s social scientists began to explore the implications of hot-cognitive models of decision-making, wherein affect could alter decision-making in multiple ways.[ix] After the attacks of September 11th 2001 the politics of fear were manifest among US decision-makers.[x] In this case the ubiquitous fear of further terrorist attacks, coupled with a desire for revenge against the perpetrators, led the United States into a series of unfortunate wars in Afghanistan (2001) and then in Iraq (2003).[xi]

FEAR AND PSYCHE

Fear seems to be an evolutionary response that often contributes to the survival of the organism in question. In humans, fear appears to be a response produced in the region of the brain that tends to govern emotions, known as the amygdala.[xii] Emotions can produce a significant (and often counterproductive) effect on decision-making and judgment, and thus we increasingly utilize affect-laden models of hot cognition that inform the decision-making calculus of policymakers. Human cognition appears to be subject to 'dual processing'; such that people process information through two distinct cognitive systems. The primary processing system appears to be associated with intuition, and the secondary system is associated with reasoning.[xiii] In addition, the primary system appears to be highly associated with experience, such that people experiencing problems or stimuli develop reflexive or automatic mechanisms for processing information, or heuristics.[xiv] This is consistent with the 'cognitive miser' hypothesis that individuals frequently use heuristics to process information rapidly.[xv] Consequently, one starting point for understanding the fear that epidemics produce, and their effects on decision-making, is the *availability heuristic*.[xvi] According to this heuristic, or mental rule of thumb, people base their decisions in the present upon the lessons they have derived from past

experiences. The legal scholar Cass Sunstein argues, "…the problem is that the availability heuristic can lead to serious errors of fact, in term of both excessive reactions to small risks that are cognitively available and insufficient reactions to large risks that are not."[xvii] In the domain of international politics the availability heuristic is often associated with the ubiquitous problem of reasoning by false analogy, wherein policymakers inaccurately compare a current crisis to those of the past, and consequently err in their assessment of the problem, and in their recommendations for alleviation of said problem.

The availability heuristic seems to have contributed to the mismanagement of the ebola crisis of 2014-15. This results from the fact that prior epidemics of *ebola zaire* exhibited certain properties of limited duration, and rapid containment, properties that led policymakers to expect that these patterns would be replicated once again during the crisis of 2014-15. For example, prior epidemics of *ebola zaire* exhibited a pattern of extreme pathogenic virulence, which resulted in the rapid mortality of the infected. The rapid and exceptional mortality generated by the disease did not allow for rapid geographical expansion of the epidemic beyond the immediate epicenter of original transmission.[xviii] As such, most prior epidemics of the virus were contained with a relative degree of ease (at least vis-a-vis the epidemic of 2015), and policymakers may have assumed that the future would look like the past. As a result, the availability heuristic may have led policymakers in the WHO (and elsewhere) to initially assume that the Ebola epidemic of 2015 would not spread beyond the confines of West Africa, and that it would be contained with a modicum of effort.

Fear-induced miscalculations may also derive from "probability neglect," wherein decision-makers neglect the *probability* that the worst case of a given scenario will actually occur.[xix] Probability neglect is bi-modal, in that it can contribute to both excessive fear or to apathy, and thus it pervades the entirety of the Fear/Apathy Cycle.

Probability neglect is a cognitive bias that is exacerbated by conditions of uncertainty, wherein decision-makers tend to exhibit a curious manner of thinking that emphasizes the poles at either end of a continuum of possibilities.[xx] Thus, when confronted by epidemic disease, decision-makers tend to embrace the most extreme positions when it comes to probability, either that the epidemic will not occur (or that it will be utterly inconsequential), or the other extreme wherein the epidemic will be utterly devastating, exhibiting properties of extreme lethality coupled with rapid geographical spread. Thus, decision-makers tend to ignore the vast range of probabilities between these two poles, which consequently leaves them vulnerable to the fear-apathy cycle. Cass Sunstein argues that "when intense emotions are engaged, people tend to focus on the adverse outcome, not its likelihood. They are not closely attuned to the probability that harm will occur. They emphasize worst-case scenarios. The result is to produce serious distortions for both individuals and societies."[xxi] He continues, "…when emotions are intense, calculation is less likely to occur, or at least that form of calculation that involves assessment of risks in terms of not only the severity but also the probability of the outcome."[xxii]

Consequently, then, the availability heuristic would seem to reinforce patterns of probability neglect. When humans are confronted by an epidemic, particularly one that involves an emergent pathogen that we have not seen before (or a novel variant of a known pathogen), the population will tend to focus on scenarios of mass mortality, rapid global spread, economic turmoil, and political chaos, even though the actual probability of such an eventuality is usually remote. These distortions are probably aggravated by what we might call the Hollywood effect, wherein films such

as "Outbreak" and "Contagion" depict mass deaths resulting from some previously unknown virus. Given that most political decision-makers lack any substantive knowledge in the domains of microbiology or public health the availability heuristic comes into play, and that heuristic may be based upon inaccurate information that people have gleaned from news media. Thus, the availability heuristic reinforces the bi-modal response consistent with probability neglect, a response of either apathy or fear. The problem with the latter response is that intense fear and panic may contribute to excessive (even draconian) responses by certain polities in an attempt to contain the epidemic, and to contain social destabilization generated by the fear. Consequently the state may engage in securitization of the epidemic, the suspension of human rights, and the overt use of force against a given population, in order to maintain cordons sanitaires and quarantine. Such draconian responses were observed in West Africa during the Ebola epidemic of 2014-15, when the international medical community could not provide sufficient control of the pathogen at the outset of the epidemic.

APATHY

In the early years of the twenty first century the dominant mode of conceptualizing global public health (at least for the vast majority of people) is apathy. Most people in the developed nations feel that they are largely immune to the ravages of infectious disease, largely as they assume that antibiotics, antivirals, and the (relatively) robust health care infrastructures of the Organization for Economic Cooperation and Development (OECD) nations mitigate the spread of epidemics.

Apathy is consistent with probability neglect, in that decision-makers exhibit a bi-modal conceptualization of possible outcomes, but this tends to be weighted towards the pole that conceptualizes the most benign outcome. Apathy is also consistent with the availability heuristic, in the sense that we conceptualize the probability of future epidemics based upon recent ones, with which we have familiarity. Given that the SARS epidemic occurred in 2003 and exhibited low mortality, the other most familiar epidemic to decision-makers in 2014-15 was that of the 'swine flu' epidemic of 2010, which also exhibited much lower mortality than projected by the WHO. Unfortunately, most policymakers held that the global health community, and particularly the WHO had overreacted to the swine flu epidemic. Consequently, the availability heuristic dictated that decision-makers would initially see the ebola epidemic as easily contained and inconsequential. As a result of the availability heuristic, modern humans may be pre-disposed towards an initial base state that emphasizes the excessively benign (or minimalist) pole of the distribution of possibilities, wherein epidemics are thought to be rare, and typically inconsequential. Thus, probability neglect may also contribute to a state of apathy among policymakers regarding the containment of epidemics.

FEAR AND DISEASE

One significant problem with emergent pathogens is that the exact probability of virulence, transmissibility, and potential for genetic mutability are essentially unknown.[xxiii] The inability to accurately estimate probability contributes to uncertainty, and then to fear. This often results in the widespread use of the availability heuristic in combination with probability neglect to generate a bi-modal response, one of denial and apathy, or of fear and overreaction.

Historically, human beings have often exhibited curious (and often highly irrational) reactions to outbreaks of infectious disease. The manifestation of an epidemic would induce panic in the afflicted population, and yet when the affliction had passed the populace would soon return to life as if nothing untoward had occurred. This hoary phenomenon, this perpetual oscillation between apathy and fear, can be traced back as far as Thucydides' chronicle of the Plague of Athens, which struck during the Peloponnesian War.[xxiv] He documents the hysteria and chaos generated by 'the plague' as it struck Athens in 430 BC, stating, "The bodies of the dying were heaped one on top of the other, and half-dead creatures could be seen staggering about in the streets….For the catastrophe was so overwhelming that men, not knowing what would next happen to them, became indifferent to every rule of religion or law. Athens owed to the plague a state of unprecedented lawlessness."[xxv]

The Black Death (*yersina pestis*), as it struck polities across Europe and the Levant during the Middle Ages (post-1347), also wrought panic wherever it manifested,[xxvi] and the ravages of the plague are documented in the writings of Niccolo Machiavelli who endured the contagion as it struck Florence.

> *Our pitiful Florence now looks like nothing but a town which has been stormed by the infidels and now forsaken. One part of the inhabitants…have retired to the distant country; one part is dead, and yet another part is dying. Thus the present is torment, the future menace, so we contend with death and only live in fear and trembling. The clean fine streets which formerly teemed with rich and noble citizens are now stinking and dirty…. Shops and inns are closed, at the factories work has ceased, the law courts are empty, the laws are trampled on. The squares, the market places… have now been converted into graves and into the resort of a wicked rabble.*[xxvii]

Historians have also chronicled the fear and chaos that gripped Europe as the Second cholera pandemic swept across the Continent in the 1830s. The cholera epidemics led to pathos, to widespread scapegoating of 'the other' as a vector of contagion, and to hysteria and violence. Richard Evans notes that the march of cholera across Europe was "marked by a string of riots and disturbances in almost every country it affected. Riots, massacres and the destruction of property took place across Russia, swept through the Habsburg Empire…and spread to Britain next year."[xxviii] Similarly, the historian Roderick McGrew argues "the hysteria focused on particular scapegoats. The most popular villains were Polish agents and foreigners in general, though both physicians and government officials were also included. By mid-summer a mass phobia had set in which affected the educated and the illiterate alike…. For the masses a spirit of evil had entered the land, and no one was immune."[xxix]

This hoary phenomenon of fear-induced socio-political and economic destabilization is not relegated to the dustbins of the past, indeed the fear that is generated by epidemics cuts across time and across cultures, and it seems to be global in its manifestation. Case in point, the fear associated with the initial emergence of the HIV/AIDS epidemic in the early 1980s resulted in the significant and widespread stigmatization of minorities, and in the creation of frequently oppressive policies towards infected peoples. The SARS epidemic is also illustrative as the emergent coronavirus struck the Pacific Rim nations in 2002-03. Fear induced destabilization was apparent again during the SARS event, and it resulted in the widespread stigmatization of minorities, particularly those of Asian descent.[xxx] Fear also functioned as the principal mechanism to derail trade between nations of the

Pacific Rim in the spring of 2003, which in turn generated circa $50 billion in economic damage.[xxxi] Ultimately the destabilization generated by SARS would eventually spur the revisions of the International Health Regulations (IHR) in 2005.[xxxii] However, the lessons of the SARS epidemic: that emerging viruses continued to threaten prosperity and governance, and that the OECD nations needed to invest in global disease surveillance capacity, and in the public health infrastructure of the developing world, were largely forgotten by policymakers in 2014.

Despite the fact that SARS resulted in the reformation of treaties such as the IHR, it did not result in a substantive shift of resources from the OECD nations to the least developed countries (LDCs) in order to improve public health infrastructure, and this is particularly true of the impoverished nations of West Africa. This is likely due to policymakers' reversion to the minimalist or apathetic state, as they dismissed the probability of another severe international epidemic. Thus, while international law proceeded to integrate nations in the domain of global health, this concord was not matched by substantive flows of resources from the OECD nations to augment surveillance capacity, or to create a robust and resilient domestic health care infrastructure in impoverished nations (beds, nurses, physicians, supplies) so crucial to the containment of emerging infectious diseases.

Humans are shocked out of their apathetic state by epidemics (e.g. ebola and SARS), and are often overwhelmed by fear (particularly as it is stoked by unscrupulous actors in the media). However, once the contagion has passed it fades quickly in peoples' memories, the lessons gleaned from past epidemics are quickly forgotten, and investments in global health infrastructure and personnel are fleeting. In order to illustrate this point, we conducted a brief review of the way in which three select pathogens were covered in international print media and explored by the academic community. Using LexisNexis, a well-known online database of major print media outlets from around the globe, the terms "Ebola", "severe acute respiratory syndrome" (SARS), and "bird flu" were searched to gain an idea of the number of articles covering these pathogens printed in each given year for the time period 1995-2015. The three terms were then entered into Academic Search Complete, an online indexing and abstracting service published EBSCO, in order to approximate the number of peer-reviewed articles published on these subjects in each given year for the same twenty year period, 1995-2015. Although many databases like it exist, Academic Search Complete was an obvious choice because it contains references from 10,110 peer-reviewed journals in a wide variety of humanities, science, and social science fields.[xxxiii] Admittedly these databases do not encompass all possible publications on infectious disease,[xxxiv] but our objective was to demonstrate broad trends that reflect the persistence of the Fear/Apathy Cycle, and not to provide a precise count of every article ever published on Ebola, SARS, or avian influenza.

Our hypothesis, that media is primarily interested in the threat of dangerous pathogens as an acute threat, was clearly supported by the data. Indeed, mainstream print media provided little coverage of pathogens such as Ebola, SARS, and avian influenza until an outbreak occurred, at which point they began covering these pathogens extensively, but for a bounded period of time. Following the containment of a given outbreak, media interest again declines significantly. Ebola is perhaps the most striking example of this trend, as the LexisNexis search identified only nineteen news articles written on the pathogen prior to February 2014, and 972 published since the West African outbreak began. As the scatter plot below illustrates, the news media was apathetic to the threat of all three pathogens prior to the onset of an acute epidemic. As expected, coverage of the SARS coronavirus was vast following the

disease's discovery and initial outbreak in 2003-2004 (801 articles published during that biennium), but quickly dropped off in 2005, when only 11 articles appear to have been written on the subject. Indeed, (aside from SARS) the news media exhibited apathy on the topic of lethal coronaviruses until late 2012, when MERS, a coronavirus with a genetic profile that is relatively similar to SARS, began stoking fears as it emerged in the Arabian peninsula.[xxxv] Avian influenza (H5N1) also follows this trend, with little media coverage prior to the pathogen's spread to Europe in 2005 (forty-nine articles written 1995-2004), after which it was widely written about until the outbreak was contained (637 articles written 2005-06). A plateau in coverage set in from 2007 to 2012-13 when coverage once gain increased to reflect mounting cases of bird flu in Asia (193 written 2007-present). The plot on the following page provides a telling graphic of these trends.[xxxvi]

Discouragingly, academia seems similarly prone to the psychological oscillations inherent in the Fear/Apathy Cycle. Our review of articles published by Academic Search Complete demonstrated that academic studies regarding ebola, SARS, and H5N1 avian influenza occurred with much higher frequency in the years immediately following an outbreak (with lag time resulting from the peer review process). While Ebola's unique properties and highly pathogenic profile resulted in a degree of scholarly interest prior to the 2014 outbreak, the scope of this scholarship pales in comparison to the wave of publications we have observed in the past two years. Academic Search Complete revealed 1,101 references containing "ebola" from 1995-2013, an average of approximately 61 publications per year. This scholarship increased by an order of magnitude following the epidemic in West Africa, as 646 publications focused on Ebola in 2014, and 988 references have already been cataloged for 2015. Analysis of scholarly work concerning SARS and avian influenza unsurprisingly also conformed to trends consistent with the Fear/Apathy cycle, with references to SARS diminishing greatly and relatively consistently as time passed following the 2003 outbreak. Spikes in scholarly work regarding avian influenza occurred in 2006 (following the European outbreak of 2005), and again in 2013, although the academic community has remained more engaged with this topic than ebola and SARS. Presumably this is due to the sustained history of recent human and animal outbreaks of avian influenza.[xxxvii]

Thus, the print media and the academic community would seem to approach the issue of dangerous pathogens in the bi-modal manner that is consistent with the Fear/Apathy Cycle. During times of epidemic disease the general population typically takes its cues from the media as to what constitute threats to their security at a given moment. Thus, the bi-modal response of the media contributes to a similarly bi-modal attitude (apathy or panic) among the general population, which may then influence elected representatives in a similar manner. Policymakers often determine the saliency of topics based upon the magnitude of media coverage that the issue attracts, and those issues that rise to the top of the media agenda are often placed high on the calendar of discussions in Congress, and in the Executive branch.[xxxvii] Furthermore, policymakers often rely on the research generated by academics in order to formulate effective public policies and govern effectively.[xxxix] Thus, if variance in academic publication reflects the Fear/Apathy cycle it may act as a mechanism to influence policymakers in a similar manner, one that reflects the bi-modal patterns delineated by the Cycle.[xl]

Table 1.1: Incidence of News Reports on Select Pathogens, 1995 to the Present

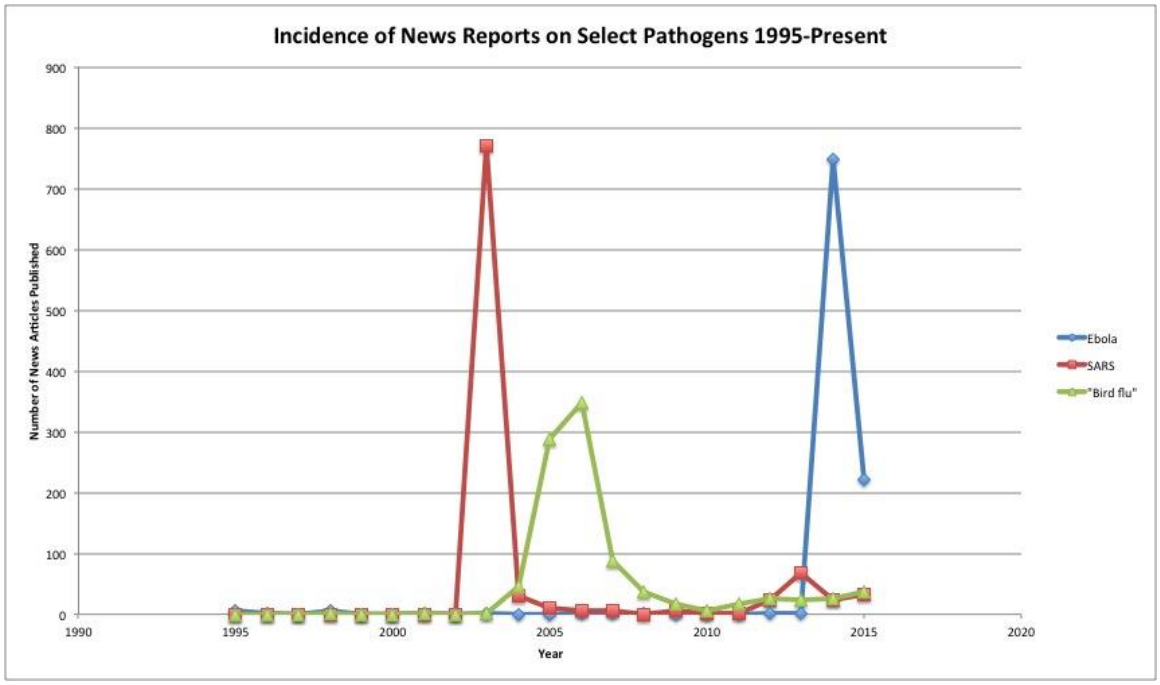
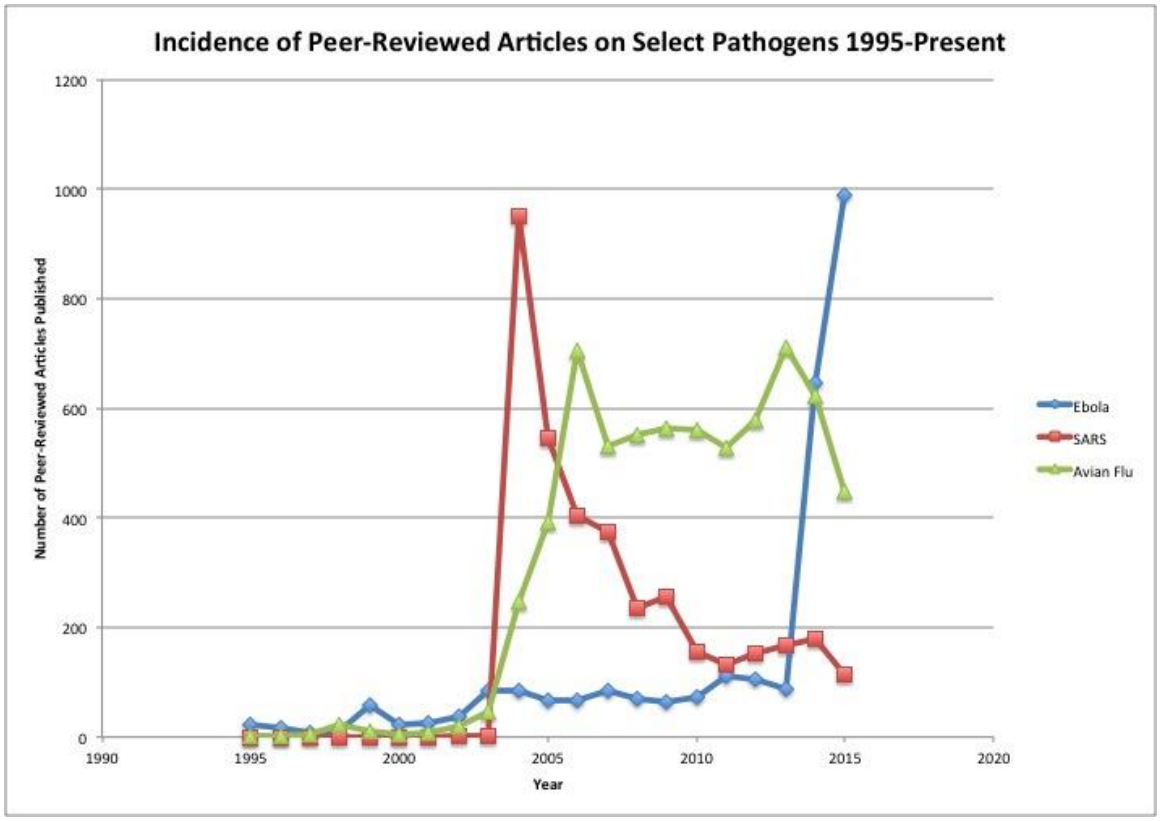


Table 1.2: Incidence of Peer-Reviewed Articles on Select Pathogens, 1995-Present



One must be cautious in interpreting the above data. The oscillation in both media attention, and academic investigation, is to be expected to a degree in the

wake of a global health crisis. While the data above is suggestive that the Fear/Apathy cycle holds across the separate domains of academe and journalism, we cannot conclude *a priori* that this effect automatically influences the domain of political decision-making to the same extent. However, given that the political sphere is highly influenced by academic experts, and by media coverage, we hypothesize that the Fear/Apathy Cycle should result in similar patterns in public policy-making as well. We leave this particular empirical investigation to subsequent research teams, as it is beyond the scope of this particular essay. In the sections below we do investigate the effects of fear and apathy upon decision-making in the domain of health at the domestic and international levels.

EBOLA, FEAR AND PROBLEMS IN GOVERNANCE (DOMESTIC LEVEL)

Although the psychology of epidemics has long been an area of interest to historians it has yet to be seriously addressed by political scientists working in the domain of health governance. There are several mechanisms that may play a role in the socio-economic destabilization that occurs at the domestic level during a particularly intense epidemic, such as the Ebola epidemic of 2014-15. Fear of disease may become exacerbated as a result of *social cascades*. Cass Sunstein argues that through such cascades "people pay attention to the fear expressed by others, in a way that can lead to the rapid transmission of a belief, even if false, that a risk is quite serious. Fear, like many other emotions, can be contagious; cascades help to explain why." In the case of the Ebola epidemic, social cascades would seem to have played a role in the propagation of fear, both within communities and between nations.[xli] During the epidemic social cascades were amplified by the international media, and by social media, contributing to the formation of in-group/out-group dynamics, which frequently resulted in the denigration or even demonization of 'the other.' This led many outside the African context to mistakenly scapegoat all West Africans as vectors of ebola transmission. Simultaneously, in the afflicted nations of West Africa rumors were rife that foreigners were deliberately spreading the virus in an effort to wipe out local populations. Ultimately, such fears of the 'other' contributed to physical assaults on aid workers throughout the region, and led to the murder of a team of 11 aid workers in Guinea.[xlii]

At the turn of the century certain political scientists warned that epidemic disease could produce a range of negative externalities that could undermine state capacity, and radiate across nations to generate considerable political, social, and economic instability.[xliii] Fear was recognized in this literature as a principal driver of socio-political and economic destabilization. Historically, such fear-induced instability often manifested in the form of demonstrations and rioting against the state, particularly as the intensification of the epidemic resulted in the populace questioning the legitimacy of political elites, and questioning the ability of the government to provide public goods.[xliv] Price-Smith (2001, 2009) argued that severe epidemics could foster widespread internal political and economic disruption, to the extent that political elites might see disease as an existential threat to the security of their nations. Such threats might then motivate political elites to employ strategies of social distancing, and in extreme cases to use military forces to maintain 'order' and to fight the contagion.[xlv] The Ebola epidemic of 2014-15 empirically demonstrated that fear and panic could generate widespread destabilization in affected polities, and that such polities would consequently employ contagionist and often draconian mechanisms in an attempt to restore political order, and to slow transmission of the pathogen.

The ebola epidemic also brought to light significant problems associated with widespread perceptions of governmental illegitimacy in Sierra Leone, Guinea, and Liberia.[xlvi] For example, both Sierra Leone and Liberia have been bedeviled with problems of governance that emanate from the legacies of civil war, and social segmentation, that have dominated those polities over the past 30 years.[xlvii] Guinea has been dominated by draconian governments that have yet to earn the trust of the population as well, and like its neighbors, the country has been plagued with violence since gaining independence in 1958.[xlviii] Thus, in these nations governmental elites suffer from perceptions of corruption and illegitimacy, which consequently makes it difficult for the government to communicate effectively with the population during times of crisis.[xlix] On a psychological level the pervasive mistrust of the state would seem to have contributed to problems in communication between the government and the population during the Ebola crisis, which magnified levels of uncertainty and consequently amplified the level of fear in the region.

During the Ebola epidemic we observed a pernicious feedback loop wherein low levels of endogenous state capacity (poor healthcare infrastructure) allowed for the flourishing of a dangerous pathogen which in turn eroded state capacity even further, necessitating external intervention by the international community in order to stem the cycle of destruction. Ebola eroded state capacity in these polities through a number of mechanisms. First and foremost, the Ebola virus degraded the already flimsy health care infrastructure in these affected countries, by sickening and killing doctors and nurses,[l] by generating such fear that health providers fled their posts,[li] and by the diversion of scarce health care resources to the treatment of Ebola (and away from other health concerns).[lii] Hospitals frequently came to be seen as abbatoirs, and not places of healing. While the erosion of state capacity during a crisis is problematic, the deaths of physicians and nurses (coupled with the fear-induced desertion of their posts) amplified the fear of the disease among the general population.

Although their responses varied slightly during the crisis, Liberia, Sierra Leone and Guinea (what we shall call the GSLL countries), all employed *social distancing* strategies as a means to limit the transmission of the virus. This entailed the mass closure of schools and churches, suspension of sporting events, closure of public areas (e.g. beaches), and even the closure of certain businesses. Moreover, the GSLL governments employed draconian means to stem the spread of the epidemic, specifically employing quarantines and *cordons sanitaires* in order to limit the movement of citizens that may have been infected with the virus.[liii] Such draconian policies were put in place to slow the movement of the pathogen through the population, but these heavy-handed responses often served to amplify the fear and societal disorder that was observed in the GSLL nations. Further, these restrictions often exacerbated the extant mistrust between the populace and the state, and resulted in widespread rioting in urban centers such as Monrovia and Freetown.[liv]

The economic cost of infectious disease outbreaks is driven primarily by aversion behavior (fear), which is comprised of both individual actions undertaken in order to avoid infection and actions taken by investors outside the zone of exposure in anticipation of these individual choices. The recent Ebola outbreak provides an example of aversion behavior as it compromises the economic vitality of an afflicted polity or region. Interestingly, aversion behavior seems to exhibit a greater long-term effect on investors than upon those individuals directly exposed to infection. Thus, even as workers return to their jobs and micro-level economic activity resumes, the major investments needed to spur full recovery remain elusive. Those who live and work well outside the zone of exposure have little incentive to re-engage with the

area, even as the situation improves. One example of this phenomenon is the negative effect that Ebola has had on tourism revenues, in both West Africa and the continent at-large. Although not a single case of Ebola Zaire has been recorded in Gambia, the government reported that 65 percent of hotel bookings and 50 percent of incoming flights were cancelled in the first quarter of 2015. Other popular destinations far from West Africa such as Tanzania, Kenya, and South Africa also experienced widespread cancellations, to the degree that the World Bank projects $550 million in foregone GDP for Sub-Saharan Africa in 2015.[lv] Even as the situation on the ground in the E3 countries improves and those in the immediate vicinity rationally decide to return to work, many throughout the world seem likely to continue avoiding engagement with the region.

The Ebola epidemic also generated widespread declines in agricultural production, among the GSLL countries. Moreover, the fear-induced quarantines and cordons that were implemented by the respective GSLL governments prevented the movement of peoples, and this meant that many agricultural laborers were unable to get to their jobs in the fields. As a result, many of the crops in the region rotted, or had not been cared for, leading to enormous losses for the agricultural sector. A February 2015 survey conducted by the World Bank Group in Liberia indicated that nearly 65 percent of agricultural households expected their harvest to be smaller than it was in the previous year. The cultivation of traditional cash crops such as rubber and cocoa have been particularly hard hit by the epidemic, with only about half of Liberian households that harvested rubber in the previous year indicating that they have been able to do so at all since the start of the Ebola outbreak.[lvi] Another significant shortcoming of the regional quarantines was that they restricted the movement of food throughout restricted regions, such that families within the quarantine zones were often deprived of food. This insecurity of food supply seems to have magnified the fear that people experienced, as they grew concerned about both the virus and starvation.

Food security and the provision of basic services remains fragile throughout the region as a result of both diminished incomes, and the lack of availability of goods due to the decline in agricultural production. Since the epidemic began, more than circa 90 percent of households interviewed by the World Bank in the GSLL countries cited food insecurity as a concern, and nearly 85 percent of respondents in Liberia indicated that they had engaged in costly coping strategies such as selling assets, borrowing money, delaying investments, spending savings, or even sending children to live elsewhere.[lvii]

Trade also declined as the fear of contagion drove neighboring countries (e.g. Cote D'Ivoire) to close their borders to goods and personnel coming from the GSLL nations, and many ships declined to dock in GSLL ports. Collectively, this fear-induced behavior led to widespread economic stagnation, and even contraction, of the economies of the GSLL in 2014, and is predicted to generate significant and negative effects through early 2015 as well. Indeed, the World Bank argues that the epidemic cut the growth rates of the GDP of the GSLL nations by more than half in 2014. Full year 2014 growth fell by an estimated 0.5 percent from a pre-outbreak estimate of 4.5 percent in Guinea, to 2.2 percent from an expected 5.9 percent in Liberia, and most strikingly, to 4.0 percent from an expected 11.3 percent in Sierra Leone. Even as infection rates declined and workers returned to their jobs, this economic contraction eroded the confidence of investors, and the World Bank projects that growth rates in the GSLL countries for 2015 will be -0.2 percent in Guinea, 3.0 percent in Liberia, and -2.0 percent in Sierra Leone.[lviii]

FEAR, APATHY AND PROBLEMS IN GLOBAL HEALTH GOVERNANCE:

Given that the Fear/Apathy Cycle appears to undermine effective governance within states afflicted by serious epidemics, we posit that it may also generate negative effects upon global health governance. The cycle would seem to negatively affect the decision-making capacity of elites in regards to epidemics. This seems to have led decision-makers to adopt a Manichean perspective during the Ebola epidemic; one consistent with probability neglect and the availability heuristic, a bipolar distribution of probabilities with an emphasis on the event (a serious epidemic) either not occurring at all, or being of little consequence.

The Director General of the World Health Organization, Margaret Chan, appears to have succumbed to the two specific dimensions of the Fear/Apathy Cycle that we have identified above, notably to the availability heuristic, and to probability neglect. In fact, multiple sectors of the WHO seem to have been vulnerable in this regard. For example, both decision-makers in AFRO WHO and in WHO Geneva seem to have succumbed to the availability heuristic and probability neglect during the early weeks of the epidemic. An estimation of Ebola based mortality and geographic spread, as based on the patterns exhibited in prior Ebola Zaire epidemics, contributed to thinking that the epidemic would simply burn itself out, or that it would not become a significant threat to global health. Thus, in this case the availability heuristic led policymakers to the inaccurate conclusion that the present epidemic would emulate the past. However, the Ebola epidemic of 2014-15 did not do so, as mortality rates were somewhat lower (which presumably allowed for wider distribution of the pathogen by infected hosts), and thus the absolute scale of infection and geographic spread were at least an order of magnitude greater than previously observed Ebola epidemics. Consequently, the obvious problem for policy makers is that the future may not look like the past, particularly when dealing with pathogens that exhibit a substantive capacity for genetic variance (such as influenza filoviruses). Our assumptions of the behavior of natural systems may be based upon what we see as linear trends, when in fact natural systems are often chaotic and non-linear, and may shift rapidly to new equilibria, ones that we have not seen before. The WHO leadership, in both Geneva and Brazzaville, failed to include such a 'Black Swan' event within their calculations.[lix] In addition it would seem that the decision-makers in WHO collectively engaged in probability neglect, holding that the most probably manifestation of Ebola Zaire would occur at the minimalist pole of the distribution of probabilities. In other words, probability neglect combined with the availability heuristic to generate the conclusion that the epidemic would be brief, and largely inconsequential.

Furthermore, the Fear/Apathy Cycle appears to undercut the resources allocated by policymakers to deal with pathogenic threats to global health. As a consequence of the apathy generated by the Cycle the WHO has been subject to serious budget cuts over the past decade, particularly since the global economic contraction of 2008-10. Moreover, in terms of the funding that WHO does receive (from member states and wealthy individuals) the allocation of resources (in terms of funding and staff) within WHO has shifted towards chronic illness, and away from control of communicable diseases.[lx] This is consistent with the dynamics of the Fear/Apathy Cycle as policymakers minimize or neglect the probability of a serious epidemic that constitutes a threat to global public health. In addition, this shift in resource prioritization of chronic disease reflects the interests of the OECD nations that had come to feel insulated from the specter of infectious disease. Policymakers in the developed world would seem to have discounted the probability of a serious

Ebola epidemic emerging, of the probability that said epidemic could spread rapidly via airplane, and that such an epidemic would resist containment at its epicenter for some period of time.

Barring some dramatic institutional change, as the ebola epidemic recedes in time the Fear/Apathy Cycle will once again lead to a decline in funding for WHO staff dedicated to the surveillance and containment of emergent pathogens at the international and regional levels. Consequently, the Cycle may undermine global health governance through its negative long-term effect on resource flows to global health infrastructure, to the WHO, through bilateral grants to receiving states, and through NGOs. Fortunately, the WHO Executive Board met on Jan 25th, 2015, and approved a $100 million contingency fund for epidemic response, and the establishment of a permanent global health emergency workforce.[lxi] The formation of the contingency fund will remove some of the fiscal encumbrances that inhibited the mobilization of the WHO during the early months of the epidemic, and the organization can now be proactive about raising funds for emergencies instead of having to go cap in hand to donor states at the height of a crisis.

The Fear/Apathy Cycle may also undermine effective compliance with the International Health Regulations. As the availability heuristic leads policymakers to expect epidemics that resemble past manifestations, and probability neglect leads policymakers to a Manichean manner of thinking that typically emphasizes the most benign scenario, we expect that the attention of policymakers to global public health will wane once again in a few years. While the initial response to the Ebola epidemic will be to ramp up investments in global health, we expect this to be short-lived, and to gradually decline once more, resulting in a dearth of surveillance and response capacity throughout much of the developing world. Thus, it is problematic to simply rely on international norms, regulations and treaties to alleviate global health crises resulting from epidemics. Clearly the efficacy of treaties like the International Health Regulations are compromised when the Fear/Apathy Cycle erodes sustained resource flows to the states of the developing world in order to build adequate pathogenic surveillance and response capacity.[lxii]

A caveat here, it is not just surveillance and laboratory capacity that is required for effective response to epidemics like Ebola; the polity in question must possess a robust and resilient health care infrastructure replete with hospitals, beds, nurses, physicians, medicines and supplies. In the case of the Ebola epidemic endogenous surveillance capacity would not have been enough to contain the spread of the pathogen, as the dearth of health infrastructure in West Africa facilitated the spread of the virus throughout the populations of the GSLL nations. While Paul Farmer argues that such inequities in capacity are primarily structural, a direct result of the crushing poverty that encumbers the peoples of the least developed economies, we argue that the Fear/Apathy Cycle is a psychological variable that may combine with these structural problems to impede sustained development of global public health infrastructure.[lxiii]

It would seem that the Fear/Apathy Cycle contributes to a Punctuated Equilibrium (PE) pattern of institutional development in the domain of global health governance. Within this PE model of institutional change, one sees a phase of apathy (equilibrium 1), which is destabilized by an exogenous shock (epidemic), this phase of turbulence is then followed by a wave of institutional building (or upgrading) which then leads to another period of rough stasis (equilibrium 2) that is once again characterized by apathy.[lxiv] The PE model is not orthagonal to functionalist models[lxv] that describe an incremental process of institution building (muddling through), although the functionalist processes will typically be observed during phases of

equilibrium in the PE model. Thus, we propose a model of both rapid and slower phases of institutional change, one that is moderated by the Fear/Apathy Cycle to a degree. The political scientist Stephen Krasner cast doubt on the incremental functionalist position when he argued, "studies of political development point to differential rates of change in social and political structures over time."[lxvi] Further support for such models comes in the work of Frank Baumgartner and Bryan Jones who argue that PE models effectively explain the rate and magnitude of change in the domestic political institutions of the USA.[lxvii] The political economist Douglass North has also remarked upon such discontinuous change in processes of institutional transformation.[lxviii]

In this model of behavior, epidemics of disease act as exogenous shocks to both afflicted polities, and to the international system in its entirety. The fear-induced destabilization that results from these epidemic shocks then generates a host of adaptive behaviors ranging from institutional development to often significant shifts in resources towards the development of national and international surveillance capacity and public health infrastructure. The International Sanitary Conferences that began in 1851 were initiated at the behest of the French, primarily as a response to the shocks of the Second cholera pandemic that began in 1829 and swept across Europe throughout the 1830s.[lxix] The Draft Sanitary Conventions (1851) and draft International Sanitary Regulations which contained 137 articles,[lxx] appear to be the first significant example of this model of institutional development and change in the domain of global health governance. Ultimately, continued epidemics, and subsequent conferences led to the adoption of the International Sanitary Conventions that were signed at Paris in 1903.[lxxi]

In the twenty-first century, the case of SARS is illustrative of such punctuated equilibrium dynamics. As noted above, the SARS epidemic generated considerable fear, social destabilization (particularly in China) and widespread economic damage, to the nations of the Pacific Rim. Following the SARS epidemic the international community made significant revisions to the International Health Regulations (2005)[lxxii], prioritized the enhancement of global pathogen surveillance networks,[lxxiii] and briefly shifted economic resources towards international organizations like the WHO. In addition, the international community founded the Global Fund for HIV/AIDS, tuberculosis and malaria as a mechanism to improve global access to treatment for those diseases. Unfortunately, this heightened state of awareness and institution building only persisted until circa 2006, whereupon policymaker interest in global health drifted back towards an apathetic state. A degree of policymaker concern about H5N1 influenza arose in 2009-10, but it dissipated rapidly after the short-lived 'swine flu' epidemic of 2009-10. At that point policymakers in the USA and Britain openly criticized the WHO for 'over-reacting' to what they considered an inconsequential pathogen. [lxxiv]

Aside from the persistent influence of the Fear/Apathy Cycle, it would seem that a threshold effect also moderates this system. The epidemic shock in question must be powerful and temporally bounded, and it must threaten the interests of economic and/or political elites in order to galvanize the necessary institutional changes at the international and/or domestic levels. Diseases that fail to meet this threshold of elite interest do not seem to generate substantive institutional change, in and of themselves. One example of this dynamic is malaria, which tends to afflict the most impoverished nations, but rarely threatens the interests of global economic and political elites. While the SARS crisis motivated policymakers to substantively revise the IHR, and to create the Global Fund, it is doubtful that significant institutional change would have occurred in the absence of the SARS shock. This nascent model

assumes that the ebola crisis of 2015 will generate a modest increase in resources directed towards the surveillance and containment of emergent pathogens. However, it remains to be seen whether the epidemic is perceived as threatening to the interests of economic and policymaking elites, such that it results in significant institutional change at the international level, or results in a substantive shift in resources from the OECD nations towards the construction (and maintenance) of public health infrastructure within the least developed countries. We present this preliminary argument in the hope that others will explore the theoretical ramifications of political psychology and the Fear/Apathy Cycle for the conduct of global health governance.

Andrew Price-Smith *is Chair and Associate Professor in the Department of Political Science at Colorado College.*

Jackson Porreca *works as a Researcher in the Political Science department at Colorado College.*

---

[i] World Health Organization, "Ebola Situation Reports," September 9, 2015, data available at http://apps.who.int/ebola/ebola-situation-reports
[ii] David M. Pigott et al., "Mapping the Zoonotic Niche of Ebola Virus Disease in Africa." Ed. Prabhat Jha. eLife 3 (2014). Available at http://www.ncbi.nlm.nih.gov/pmc/articles/PMC4166725/.
[iii] Henry L. Chambers Jr, "Fear, Irrationality, and Risk Perception." Mo. L. Rev. 69 (2004): 1047.
[iv] Thucydides, History of the Peloponnesian War, New York: Penguin, 1978.
[v] Thomas C. Schelling, The Strategy of Conflict, Cambridge, MA: Harvard University Press, 1981.
[vi] James Bight, et al., Cuba on the Brink, Lanham, MD: Rowman and Littlefield, 1992.
[vii] See H.A. Simon, "A behavioral model of rational choice," Quarterly Journal of Economics, Vol 69 (1), 1955, pp. 99-118; H.A. Simon, Administrative Behavior: A study of Decision-making Processes in Administrative Organization, New York, Macmillan, 1968; and H.A. Simon, "Making Management Decisions: the role of intuition and emotion," Academy Management Executive, Vol 1 (1), 1987, pp. 57-64.
[viii] See in particular, Robert Jervis, Perception and Misperception in International Politics, Princeton: NJ, Princeton University Press, 1976.
[ix] Norbert Schwarz, "Emotion, Cognition, and Decision-Making" Cognition and Emotion, Vol 14 (4), 2000, pp. 433-440.
[x] Fear acted as both a driver of new security policies (e.g. the Patriot Act), and it was also used as a mechanism by political elites (and the media) to manipulate public opinion.
[xi] On the affect-laden psychology of terrorism, and policymaker response see Samuel J. Sinclair and Daniel Antonius, The Psychology of Terrorism Fears, New York: Oxford University press, 2012.
[xii] Joseph LeDoux, The Emotional Brain, (New York: Simon and Schuster, 1996).
[xiii] Note the summary provided in E Salas, et al., "Expertise-based intuition and decision-making in organizations," Journal of Management, Vol 36 (4), pp. 941-971.
[xiv] J.A. Bargh and T. Chartrand, "The Unbearable Automaticity of Being," American Psychologist, Vol 54 (7), 1999, pp. 462-479.
[xv] D. Kahneman, "A Perspective on Judgment and Choice. Mapping Bounded Rationality," American Psychologist, Vol 58 (9), 2003, pp. 697-720.
[xvi] Tversky, Amos, and Daniel Kahneman, "Availability: A heuristic for judging frequency and probability," Cognitive psychology 5, no. 2 (1973): 207-232; Gigerenzer, Gerd, and Wolfgang Gaissmaier. "Heuristic decision making."Annual review of psychology 62 (2011): 451-482; Finucane, Melissa L., Ali Alhakami, Paul Slovic, and Stephen M. Johnson, "The affect heuristic in judgments of risks and benefits," Journal of behavioral decision making 13, no. 1 (2000): 1-17.
[xvii] C. Sunstein p. 66.

[xviii] Legrand, Judith, Rebecca Freeman Grais, Pierre-Yves Boelle, Alain-Jacques Valleron, and Antoine Flahault, "Understanding the dynamics of Ebola epidemics," Epidemiology and infection 135, no. 04 (2007): 610-621.
[xix] Cass Sunstein, Laws of Fear, New York: Cambridge University Press, 2005, p.6.
[xx] Slovic, Paul, and Ellen Peters, "Risk perception and affect," Current directions in psychological science 15, no. 6 (2006): 322-325; Slovic, Paul, Ellen Peters, Melissa L. Finucane, and Donald G. MacGregor, "Affect, risk, and decision making," Health psychology 24, no. 4S (2005): S35.
[xxi] Sunstein, p. 65.
[xxii] Sunstein, p. 67.
[xxiii] Stephen S. Morse, "Examining the Origins of Emerging Viruses" in SS Morse ed. Emerging Viruses, New York, NY, Oxford University Press, 1993, pp. 10-27.
[xxiv] Thucydides, History of the Peloponnesian War, Hackett Publishing, 1998: 14.
[xxv] Thucydides, History of the Peloponnesian War, (New York, NY: Penguin, 1980), p. 155.
[xxvi] Sheldon Watts, Epidemics and History, Yale University Press, 1997: 3.
[xxvii] Niccolo Machiavelli, Description of the Plague at Florence in 1527, as quoted in Johannes Nohl, The Black Death: A Chronicle of the Plague, Yardley, PA: Westholme, 2006, pp. 216-7.
[xxviii] Richard Evans, "Epidemics and Revolutions: Cholera in Nineteenth Century Europe," in T. Ranger and P. Slack, Epidemics and Ideas, (New York, NY: Cambridge University Press, 1992) p. 158.
[xxix] Roderick McGrew, Russia and the Cholera: 1823-1832, (Madison, WI: University of Wisconsin Press, 1965) pp. 106-7.
[xxx] Bobbie Person et al., "Fear and Stigma: The Epidemic within the SARS Outbreak," Emerging Infectious Diseases 10.2 (2004): 358–363. PMC. Web. 13 Oct. 2015.
[xxxi] "Fear only makes it worse," Economist, 16 August 2014, http://www.economist.com/news/international/21612158-epidemics-damage-economies-well-health-panicking-only-makes-it-worse
[xxxii] World Health Organization, International Health Regulations Enter into Force, at http://www.who.int/mediacentre/news/releases/2007/pr31/en/
[xxxiii] "Academic Search Complete," Databases: Library of Congress E-Resources Online Catalog. Library of Congress. Available at http://eresources.loc.gov/record=e1000006~S9
[xxxiv] For example, certain scholarly works published in languages other than English may not be included.
[xxxv] Raoul J. de Groot, Susan C. Baker, Ralph S. Baric, Caroline S. Brown, Christian Drosten, Luis Enjuanes, Ron AM Fouchier et al., "Middle East respiratory syndrome coronavirus (MERS-CoV): announcement of the Coronavirus Study Group." Journal of virology 87, no. 14 (2013): 7790-7792.
[xxxvi] See Table 1.1
[xxxvii] See Table 1.2
[xxxviii] Jonathan Cohen, Yariv Tsfati, and Tamir Sheafer, "The Influence of Presumed Media Influence in Politics Do Politicians' Perceptions of Media Power Matter?" Public Opinion Quarterly 72, no. 2 (2008): 331-344; Thomas Meyer, Media democracy: how the media colonize politics. Polity, 2002; Piers Robinson, "Theorizing the Influence of Media on World Politics Models of Media Influence on Foreign Policy," European Journal of Communication 16, no. 4 (2001): 523-544; Craig, Geoffrey. The media, politics and public life. Allen & Unwin, 2004.
[xxxix] Lawrence R. Jacobs and Benjamin I. Page, "Who influences US foreign policy?" American Political Science Review 99, no. 01 (2005): 107-123; Matthew A. Baum, and Philip BK Potter, "The relationships between mass media, public opinion, and foreign policy: Toward a theoretical synthesis." Annu. Rev. Polit. Sci. 11 (2008): 39-65.
[xl] Due to the nature of the peer review process academic publications will exhibit a temporal lag-effect, as compared with media publications.
[xli] J.A. Fowler and N.A. Christakis, "Cooperative behavior cascades in human social networks," PNAS, Vol 107 (12), 23 March 2010, 5334-8.
[xlii] BBC News, Ebola Outbreak, Guinea Health team killed, Sept 19th, 2014, http://www.bbc.com/news/world-africa-29256443
[xliii] See Andrew T. Price-Smith, The Health of Nations: Infectious disease, Environmental Change, and Their Effects on National Security and Development. MIT Press, 2001; Price-Smith, Singer, Peter W. "AIDS and International Security," Survival 44, no. 1 (2002): 145-158; Robert L. Ostergard Jr, "Politics in the Hot Zone: AIDS and National Security in Africa," Third World Quarterly 23, no. 2 (2002): 333-350; Jeremy Youde, "Enter the Fourth Horseman: Health Security and International Relations Theory." Whitehead J. Dipl. & Int'l Rel. 6 (2005): 193; Andrew T. Price-Smith, Contagion and Chaos: Disease, Ecology, and National Security in the Era of Globalization. MIT press, 2009; Yanzhong Huang and A. Price-Smith, "Epidemic of Fear" IN A.F. Cooper, Innovation in Global Health Governance: Critical Cases, Ashgate, UK, 2009.

[xliv] This was certainly the case during epidemics of the Black Death, and the later cholera epidemics that struck Europe in the 1830s. For greater detail, see Price-Smith, Contagion and Chaos, 2009.
[xlv] This model of existential threats and their and draconian responses was based upon historical analyses of the interactivity between state and society during times of epidemic disease, and developed in A. Price-Smith, Contagion and Chaos, MIT Press, 2009.
[xlvi] Emanuel Santi, "What the Ebola Outbreak Tells Us About Poor Governance and State Fragility," African Bank Development Group. October 2014. Available at: http://www.afdb.org/en/blogs/measuring-the-pulse-of-economic-transformation-in-west-africa/post/what-the-ebola-outbreak-tell-us-about-poor-governance-and-state-fragility-13656/; "Statement on Ebola and Conflict in West Africa," International Crisis Group. September 23, 2014. Available at: http://www.crisisgroup.org/en/publication-type/media-releases/2014/africa/statement-on-ebola-and-conflict-in-west-africa.aspx
[xlvii] "A Region in Flames", The Economist. July 3, 2003.
[xlviii] Hank J. Cohen, "Guinea: The Inevitable Tragedy," Journal of International Peace Operations, (January 2010): 33-35.
[xlix] Desmond Davies, "Ebola and the Failure of Governance," New African no. 543 (October 2014): 32-35.
[l] WHO, Unprecedented number of medical staff infected with Ebola, 25 August 2014, http://www.who.int/mediacentre/news/ebola/25-august-2014/en/
[li] Kevin Sieff, "Liberia already only had a few dozen of its own doctors. Then came ebola." Washington Post, 11 October 2014.
[lii] M Fox, "Runaway Doctors and Missing Supplies cripple care in Ebola-hit Liberia," NBC News, at http://www.nbcnews.com/storyline/ebola-virus-outbreak/runaway-doctors-missing-supplies-cripple-care-ebola-hit-liberia-n220686
[liii] L.O. Gostin, Lucey D., Phalen A., "The Ebola Epidemic: A Global Health Emergency," Journal of the American Medical Association no. 312 (September 2014): 1095-1096.
[liv] N. Onishi, "Clashes erupt as Liberia sets an ebola quarantine," New York Times, 20 August 2014; A. Zavis and C. Mai-Duc, "Clashes erupt as Liberia seals off slum to prevent spread of ebola," LA Times, 20 August 2014, at http://www.latimes.com/world/africa/la-fg-africa-liberia-ebola-quarantine-curfew-20140820-story.html
[lv] "The Economic Impact of Ebola on Sub-Saharan Africa: Updated Estimates for 2015"
[lvi] World Bank Group, "The Socio-Economic Impacts of Ebola in Liberia," February 24, 2015. Available at http://www.worldbank.org/content/dam/Worldbank/document/Poverty%20documents/SocioEconomic%20Impacts%20of%20Ebola%20in%20Liberia%20Feb%2024.pdf
[lvii] "The Socio-Economic Impacts of Ebola in Liberia" and "The Economic Impact of Ebola on Sub-Saharan Africa: Updated Estimates for 2015."
[lviii] World Bank Group, "The Economic Impact of Ebola on Sub-Saharan Africa: Updated Estimates for 2015," January 20, 2015. Available at http://www.worldbank.org/external/default/WDSContentServer/WDSP/IB/2015/01/19/000112742_20150119170232/Rendered/PDF/937210REVISED000Jan0200201500OFINAL.pdf
[lix] See Nassim Taleb, The Black Swan, New York, NY: Random House, 2007.
[lx] S. Fink, "Cuts to WHO hurt response to ebola crisis," New York Times, 3 September 2014. http://www.nytimes.com/2014/09/04/world/africa/cuts-at-who-hurt-response-to-ebola-crisis.html ; T McCoy, "Why the WHO could not stop the ebola outbreak," Washington Post, 16 September 2014.
[lxi] Jeremy Youde, "With Signs of Ebola Waning, WHO Must Adapt for the Next Outbreak," World Politics Review, 2 Feb 2015, available at http://www.worldpoliticsreview.com/articles/14979/with-signs-of-ebola-waning-who-must-adapt-for-the-next-outbreak
[lxii] This point is echoed in Sara Davies, Adam Kamradt-Scott, and Simon Rushton, Disease Diplomacy: International Norms and Global Health Security, Johns Hopkins University Press, 2015.
[lxiii] Paul Farmer, Pathologies of Power: Health, Human rights, and the New War on the Poor. Vol. 4. Univ of California Press, 2004.
[lxiv] Regarding the dynamics of punctuated equilbria see Stephen J. Gould, The Structure of Evolutionary Theory, Belknap Press, 2002, pp. 765-768.
[lxv] For an example of a seminal functionalist model see Ernst Haas, Beyond the Nation-State: Functionalism and International Organization, Stanford, CA: Stanford University Press, 1964.
[lxvi] Stephen Krasner, "Approaches to the State: Alternative conceptions and Historical Dynamics," Comparative Politics, 16, No. 2, 1984, pp. 223-246.
[lxvii] Frank Baumgartner and Bryan Jones, Policy Dynamics, Chicago, IL: University of Chicago Press, 2002

[lxviii] Douglass North, Institutions, Institutional Change and Economic Performance, Cambridge University Press, 1990.
[lxix] The International Sanitary Conferences were also efforts to contain the additional scourges of yellow fever and plague.
[lxx] David P. Fidler, International Law and Infectious Diseases, New York, NY: Oxford University Press, 1999.
[lxxi] The text of the International Sanitary Convention (1903) is available at http://www.loc.gov/law/help/us-treaties/bevans/m-ust000001-0359.pdf
[lxxii] Text of the International Health Regulations (revised 2005) available from the World Health Organization at http://www.who.int/ihr/9789241596664/en/
[lxxiii] Rebecca Katz and Julie Fischer, "The Revised International Health Regulations: A Framework for Global Pandemic Response," Global Health Governance, Vol III, No 2, Spring 2010
[lxxiv] See BBC News, http://news.bbc.co.uk/2/hi/uk_news/scotland/8646754.stm

Ebola and WHO Reform

Charles Clift

The World Health Organization's (WHO) programme of reform, begun in 2010, did not prevent the WHO from failing in getting to grips with the Ebola outbreak in 2014. At the root of its problems in fighting Ebola was the dysfunctionality inherent in its three-tier structure including six self-governing regional offices and 150 country offices. The reform programme has failed so far to address adequately this aspect of WHO governance. In the absence of fundamental reform, there are proposals to institute a 'command and control' structure which bypasses the WHO's decentralized governance structure in the event of emergencies. It is not clear that the specific reform proposals on these lines made by the five panels that have reported to date on the lessons to be learned from Ebola are capable of being implemented by the WHO, or that member states as a whole really want to see the fundamental changes being advocated for the WHO's emergency work.

In January 2010 Margaret Chan, the WHO's director-general (DG), called member states together to discuss the future of financing at the WHO. This meeting was precipitated not so much by fears about overall funding levels in the wake of the financial crisis as by concerns about the WHO's reliance on uncertain and inflexible funding – notably the roughly 20/80 split between mandatory assessed contributions from member states, and voluntary contributions, overwhelmingly earmarked for specific activities, provided by member states and other funders. Since funding cannot be considered separately from issues to do with priorities, efficiency and effectiveness, this meeting was the origin of the WHO's so-called reform programme, still ongoing in 2016.

Surprisingly the report of the 2010 meeting suggested that in 'some areas of work - particularly in relation to global norms and standard setting, surveillance and the response to epidemics and other public health emergencies…WHO performed effectively (underlining added) and there was little disagreement that these areas should remain key elements of the Organization's core business'[1] This was in spite of the fact that the meeting followed immediately on the experience of the 2009 H1N1 outbreak, which had raised several questions about the WHO's performance, subsequently analysed in detail in the report of the IHR Review Committee.[2] . Perhaps it was this complacency that caused the WHO to cut its budget for outbreak and crisis response by half in its 2014/15 budget (Butler, 2014).[3] As many have since pointed out it took the Ebola crisis for the WHO and its member states to consider implementing two of the most important recommendations from the IHR Review report - the global health emergency workforce and a $100 million contingency fund.

The Ebola crisis of 2014 focused international attention on the fact that the WHO's reform programme, four years on, had demonstrably failed to improve its ability to address health emergencies. Médecins Sans Frontières (MSF) and others working to combat Ebola on the frontline criticized WHO's slow response.[4] They said that it should have taken decisive action much earlier than it did in mobilizing funding and personnel

from other international actors, as well as intensifying its own efforts to support governments with technical assistance and expertise.

Others blame the WHO's sluggishness and lack of leadership on its fundamental structural problems, which the reform programme launched by Margaret Chan in 2010 had failed to address. These structural problems include both its funding and its unique structure of regional offices which elect their own leaders. Much adverse comment was directed at the role of WHO's Africa regional office in Brazzaville[5], the alleged lack of good cooperation between Brazzaville and Geneva and the failure of the WHO's country offices to play a useful role, or even to play a counterproductive one. It is reported that the WHO Guinea office blocked visas for an expert team and $500,000 in aid.[6]

These criticisms of the WHO reflected issues raised in a 2014 Chatham House report based on the deliberations of a high-level working group.[7] One relevant recommendation in the report (whose writing preceded knowledge of the Ebola outbreak) was that the WHO's core functions should include 'promoting and maintaining global health security' with specific reference to fighting global health emergencies. However, a main focus of the report was the inefficiencies and incoherence arising from the WHO's three-tier governance structure based on the six self-governing regional offices associated with 150 country offices. In this structure, each regional director (RD) is effectively beholden to the regional member states they were elected by, not to their nominal chief, the DG. Although in WHO's constitution (Article 35) she is responsible for appointing all WHO staff, including RDs when the regional committees' nomination is endorsed by the WHO's Executive Board (EB) (Article 52), the political reality is that she and the EB defer to the regional committees' choice of RD.[8] This means that she can only seek to persuade her six RDs to do what she wants– she and the EB choose not to exert their constitutional authority over them or to replace them if they fail to perform.

Reflecting the many inconclusive debates on this question which have arisen since the WHO's establishment in 1948,[9] the working group considered two mutually exclusive options for fundamentally changing the regional structure:

- Unitary - making the WHO like other UN organizations by abolishing self-governing regional offices with Geneva determining the best regional and country office structure
- Decentralized – applying the model of the Pan-American Health Organization (PAHO), the only WHO regional office principally dependent on contributions from its member states, to the other five regional offices by making their continued existence dependent on direct contributions from their member states.

Neither of these options has filtered through into the formal member state discussions about reform – presumably because they are put in the 'too difficult' box. Yet again and again some member states refer to the difficulties caused by the WHO's three-tier structure, and argue that the absence of governance reform threatens the overall WHO reform programme and its operational effectiveness.

That is why member states established in early 2015 a consultative member state process on governance reform to consider 'concrete ways to improve the alignment of the governance of all three levels of the Organization, so as to improve accountability

and effectiveness.'[10] It seems highly unlikely that this group, due to report to the World Health Assembly (WHA) this year, will recommend radical reforms on the lines proposed in the Chatham House report. Its latest meeting, in March 2016, failed to resolve the difficulties in respect of the alignment issue, where regional member states, particularly those from PAHO, resisted proposals, mainly from the European donor nations, to increase the accountability of RDs to the director-general and the EB.

This ambivalence about the WHO's regional structure and the correct response to it was reflected in Chancellor Angela Merkel's address to the WHA in May 2015:

> *It is, I am sure, an advantage for the World Health Organization to have 150 country offices and six regional offices in addition to its headquarters – a decentralized structure with strong local links is important. But let's be honest. Decentralized structures can also impede decision-making and hinder good functioning. Therefore the advantages of having a decentralized organization must be harnessed in a way that links the three levels on which the WHO operates through clear hierarchies, so that, ultimately, everyone knows who has the say in any given situation, who has reporting obligations, and who has to carry out the work. This is, of course, easier said than done. But I think that right now, when we are trying to learn lessons, it is important for everybody to make a special effort, to accept this challenge, and thus together to come up with something better.*[11]

A strong theme in the response of the WHO and its member states to its failures over Ebola was to focus on establishing a 'command and control' structure for emergencies, which would somehow bypass the established decentralized structure deemed to have been at the root of the Ebola failures. In her speech to the WHA, however, Margaret Chan demonstrated that she had not quite understood this point:

Concerning command and control, I have an excellent cabinet in my six Regional Directors. They advise. I listen. I decide.[12]

Few believe this is how it works now or could work in the future. Rather, Margaret Chan is a prisoner of the politics of a governance structure that limits her control of what happens in the regional and country offices. In the absence of fundamental reform of the WHO's regional structure that will always be the case.

In essence, the WHO's problems with the Ebola response lie in the realms of political economy rather than of finance and human resources. In the case of Ebola, the WHO was generally unwilling to upset affected member states who were reluctant to admit the scale of the outbreak they faced, their difficulties in dealing with it, and fearful of the economic consequences of disclosure. Because the WHO country and regional offices are close to national ministries of health they failed to take the independent stance which the situation demanded. This was in stark contrast to the SARS outbreak of 2003 where the then director-general, Gro Harlem Brundtland, was prepared to take immediate and bold steps to alert the world to the threat:

> *…bold because they were made purely on the basis of rapidly accumulating scientific evidence, because they put concerns for public health first and foremost, and because they were made despite concerns about potential political pressures.*[13]

There are circumstances in which determined leadership can overcome structural obstacles to putting public health priorities first, but determined leaders are few and far between. Underlying the WHO's relationship with its member states is a lack of trust in

the WHO secretariat's ability to deliver. That is why member states, with few exceptions, refused to countenance the 5% increase in assessed contributions (amounting to less than $25 million annually) that the WHO had proposed for its 2016/17 budget. That is why the major member states are content that the WHO's resources are mainly provided in the form of earmarked voluntary contributions that fit their priorities and over which they have more direct control.

Meanwhile, the vast majority of member states, in low- and middle-income countries, pay a little over $60 million annually in contributions. In return, the WHO provides a regional and country office infrastructure, mainly for their benefit, which costs over $1.3 billion and employs 75% of the WHO's permanent staff and several thousand more staff on short-term contracts. There are benefits to public health – but close to the interests of many ministries of health is the opportunity to obtain employment on UN salary scales in regional and country offices and the patronage this offers to those in governance positions in the regions. There are therefore, for diverse reasons, very strong interests on the part of almost all member states in maintaining the status quo.

This is the reason that the attention of member states is now focused on devising ways in which the WHO can operate in one way in emergencies ('command and control') and in the traditional manner, for all its flaws, in the rest of its business.

As of March 2016 there have been five reports on the lessons to be learned from the Ebola episode commissioned by the WHO, the UN or independently.[14] [15] [16] [17] [18] All of them have made similar recommendations to the effect that the WHO should establish a unified centre or programme for outbreaks and emergencies which would have a single line of authority, including the ability to control activities at regional and country level where necessary. Four of the reports favour a Centre which would have an independent Board to emphasise that it will have separate modes of operation and accountability from the rest of the WHO, including a unified command structure at all three levels of the organization.

The WHO itself has initiated a Programme for Health Emergency Management[19] with many of the same proposed features as a Centre but uncertainty remains about how far the DG is prepared to go in disrupting her relationship with her RDs by insisting on unified control from Geneva during emergencies. She seems to resist the idea of a Centre, rather than a Programme, precisely because it connotes independence from established WHO programmes and ways of working.

Her advisory group on outbreak and emergency reform endorsed the idea of a Programme while agreeing with the Ebola Interim Assessment Panel[20] that a "single merger [of organizational units within WHO] will not suffice – it will need new organizational structures and procedures". In essence therefore it wanted a Centre in all but name:

> *WHO must have a single Programme for its work in outbreaks and emergencies, with a single budget, a single workforce, a single line of authority, a single operations support system, and a single set of business processes…"*[21]

The question remains whether a unitary outbreak and emergency entity, operating with different budgetary, recruitment and procurement rules, and governance arrangements can operate effectively within the WHO's long-established bureaucratic and decentralized governance structure. The inability of member states to agree more

generally on governance reform, and the DG's reluctance to challenge the WHO's existing ways of working, suggests that this remains a very pertinent question.

Charles Clift *is a Senior Consulting Fellow at the Centre on Global Health Security at Chatham House.*

---

[1] World Health Organization, *The future of financing for WHO: Report of an informal consultation convened by the Director-General* (Geneva: WHO, 2010). Available at: http://www.who.int/dg/who_futurefinancing2010_en.pdf

[2] WHO, *Report of the Review committee on the functioning of the International Health Regulations (2005) in relation to Pandemic (H1N1) 2009* (Geneva: WHO, 2011). Available at: http://apps.who.int/gb/ebwha/pdf_files/WHA64/A64_10-en.pdf

[3] Butler, Declan. "Agency gets a grip on budget," Nature 498(7452):18-9, June 6, 2013. Available at: http://www.nature.com/news/agency-gets-a-grip-on-budget-1.13134

[4] David Flynn, Stephanie Nebehay, "Aid Workers ask where was WHO in Ebola outbreak?" *Reuters,* 2014. Available at: http://www.reuters.com/article/2014/10/06/us-health-ebola-who-idUSKCN0HU03Q20141006

[5] Rafaela Von Bredow, Veronica Hackenbroch, "Interview with Ebola Discoverer Peter Piot: 'It Is What People Call a Perfect Storm'," *Spiegel Online*, 2014. Available at: http://www.spiegel.de/international/world/interview-with-peter-pilot-discoverer-of-the-ebola-virus-a-993111-druck.html

[6] Sarah Boseley, "World Health Organisation admits botching response to Ebola outbreak," *The Guardian,* 2014. Available at: http://www.theguardian.com/world/2014/oct/17/world-health-organisation-botched-ebola-outbreak

[7] Clift, Charles, What's the World Health Organization For? Final Report from the Centre on Global Health Security Working Group on Health Governance. London: Royal Institute of International Affairs, Chatham House, 2014. Available at: http://www.chathamhouse.org/sites/files/chathamhouse/field/field_document/20140521WHOHealthGovernanceClift.pdf

[8] The WHO Constitution. Available at: http://www.who.int/governance/eb/who_constitution_en.pdf

[9] Charles Clift, "The Role of the World Health Organization in the International System, Working Group on Governance. Paper 1," *Chatham House.* 2013. Available at: http://www.chathamhouse.org/sites/files/chathamhouse/public/Research/Global%20Health/0213_who.pdf

[10] WHO Member States consultative process on governance reform Available at: http://apps.who.int/gb/mscp/mscp.html. Open-ended intergovernmental meeting on governance reform. Available at: http://apps.who.int/gb/gr/oeimgr/index.html

[11] Angela Merkel, *Address by Her Excellency Angela Merkel, the Federal Chancellor of the Federal Republic of Germany, to Sixty-eighth World Health Assembly,* (Geneva: WHO 2015). Available at: http://apps.who.int/gb/ebwha/pdf_files/WHA68/A68_DIV5-en.pdf

[12] Margaret Chan *Address by Dr. Margaret Chan, Director-General, to the Sixty-eighth World Health Assembly,* (Geneva: WHO 2015). Available at: http://apps.who.int/gb/ebwha/pdf_files/WHA68/A68_3en.pdf

[13] David Heymann, "How SARS was Contained," *New York Times,* 2013. Available at: http://www.nytimes.com/2013/03/15/opinion/global/how-sars-was-containted.html?_r=0

[14] WHO, Report of the Ebola Interim Assessment Panel. Geneva: World Health Organization, 2015. Available at: http://www.who.int/csr/resources/publications/ebola/report-by-panel.pdf

[15] Moon, S, Sridhar D, Pate, M et al. "Will Ebola change the game? Ten essential reforms before the next pandemic. The report of the Harvard-LSHTM Independent Panel on the Global Response to Ebola," *Lancet.* 2015 (386) 2204-2221.

[16] Commission on a Global Health Risk Framework for the Future "The Neglected Dimension of Global Security: A Framework to Counter Infectious Disease Crises" 2016 National Academy of Medicine, Secretariat. Available at: http://www.nap.edu/catalog/21891/the-neglected-dimension-of-global-security-a-framework-to-counter
[17] WHO Advisory Group, Advisory Group on Reform of WHO's Work in Outbreaks and Emergencies. Second Report (Geneva: WHO, 2016). Available at: http://www.who.int/about/who_reform/emergency-capacities/advisory-group/second-report.pdf
[18] UN High-level Panel on the Global Response to Health Crises "Protecting Humanity from Future Health Crises" UN 2016. Available at: http://www.un.org/News/dh/infocus/HLP/2016-02-05_Final_Report_Global_Response_to_Health_Crises.pdf
[19] WHO. High-level design for a new WHO health emergencies programme Report by the Director-General. EB138/55 22 January 2016. Available at: http://apps.who.int/gb/ebwha/pdf_files/EB138/B138_55-en.pdf
[20] See note 14. 21 See note 17.

Human Security Governance: Is UNMEER the Way Forward?

Maryam Deloffre

United Nations Security Council (UNSC) Resolution 2177 (2014) was politically salient because it labeled the Ebola crisis as a threat to international peace and security and created UNMEER, the first-ever UN system-wide emergency health mission. This article considers the implications of the UNSC's resolution and establishment of UNMEER for the future of humanitarian action. It conceptualizes national and human security approaches to humanitarian intervention, discusses the implications for policy and then examines UNMEER using this lens. It finds that while the UNSC's securitization of the Ebola outbreak incentivized cooperative behavior, UNMEER used a traditional security approach in its response to the Ebola outbreak: it was primarily organized around a health mandate and focused on the technical and medical aspects of disease containment; major donors contributed significant amounts in bilateral assistance to affected countries; and it emphasized compliance with financial and legal accountability standards. UNMEER's exceptional power to assign responsibilities to implementing partners, fund mission critical activities, and maintain an accountability chain, nonetheless granted it the authority to both lead and oversee the intervention. Better coordination and standardization between health and humanitarian sectors, development of mutual accountability principles, and integration of a human rights perspective would improve human security outcomes in future global responses.

INTRODUCTION

The 2014 Ebola outbreak in the West African countries of Guinea, Liberia, and Sierra Leone overwhelmed national healthcare systems, caught the international humanitarian-health system off guard, caused widespread panic across the globe and claimed 11,315 lives.[1] As of this writing, the region is close to being declared Ebola-free, but the political, economic, psychological and social aftershocks continue to reverberate throughout the region. From the perspective of humanitarian governance, the global response to the Ebola outbreak exposed both deep inadequacies in the global systems tasked with safeguarding global public health, and opportunities for developing better tools of global governance.

A well-noted inadequacy was the inability of the global system to quickly diagnose and react to the outbreak. The World Health Organization (WHO) declared a public health emergency of international concern (PHEIC) in August 2014, months after Doctors Without Borders (Médecins Sans Frontières-MSF) warned of the unprecedented nature of the crisis.[2] The United Nations (UN) publically pushed for global action on September 18, 2014 when the Security Council (UNSC) adopted Resolution 2177 stating, "the unprecedented extent of the Ebola outbreak in Africa constitutes a threat to *international peace and security*."[3] This resolution galvanized a global response and led to the creation of the United Nations Mission for Ebola Emergency Response (UNMEER), the first-ever UN system-wide emergency health mission.[4]

The UNSC is mandated with maintaining international peace and security through a variety of mechanisms including humanitarian intervention—where

external state actors intervene militarily in another state to prevent, alleviate, or arrest a humanitarian crisis resulting from conflict—and peacekeeping missions—designed to stabilize conflict situations after a ceasefire and assist in implementing comprehensive peace agreements. Not since UNSC resolution 1308 (2000), which identified HIV/AIDS as a security risk in Africa, has the UNSC considered a health issue as a security threat. , The establishment of UNMEER was an unprecedented innovation that neither conformed to the mandate of a traditional peacekeeping operation nor to a political mission. Might the UNSC resolution and the creation of UNMEER herald an expansion of the UNSC's view of security and a diversification of its toolkit for ensuring stability? How do national and human security approaches to humanitarian-health crises differ and what lessons from UNMEER could be applied to future health missions?

I begin by differentiating between national and human security approaches to humanitarian-health crises using four guiding questions: security for whom, from what, by whom and how? Using this lens, I show that the Ebola emergency constitutes a threat to human security. Major UN agencies and governments acknowledged the outbreak's widespread human security effects, which complicated subsequent policy planning because the crisis did not conform to conventional categories of humanitarian intervention. Next, the article uses the framework to analyze UNMEER and determine what lessons might be drawn for future health missions.

It is difficult to draw definitive conclusions about UNMEER because data and evaluations are only now becoming available. Nevertheless, the article examines available evidence and finds that in contrast to previous research, the UNSC's securitization of the crisis increased rather than decreased global cooperation. Another finding is that UNMEER's overall approach to the Ebola outbreak was rather traditional: it was primarily organized around a health mandate and focused on the technical and medical aspects of disease containment; major donors contributed significant amounts in bilateral assistance to affected countries; and it emphasized compliance with financial and legal accountability standards. However, UNMEER was successful in stamping out the outbreak and important innovations incentivized cooperative behavior. UNMEER's exceptional power to assign responsibilities to implementing partners, fund mission critical activities and maintain an accountability chain, granted it the authority to both lead the intervention and galvanize the global response to the outbreak.

UNPACKING HUMAN SECURITY

National and human security approaches to health threats produce different policy prescriptions for global institutions. Most notably, a national security approach requires isolating, containing and eradicating a specific pathogen to stabilize a crisis situation, while a human security approach prescribes a dual-pronged approach that both contains the disease and addresses the underlying sources of insecurity. This section compares national to human security using four guiding questions: (1) *Security for whom?* (2) *From what?* (3) *By whom?* and (4) *How?* to organize the discussion. Following Paris, I view human security as a broad category of research that is a distinct branch of security studies and not a concept intended to usurp or replace national security.[5] While Paris and other scholars' work on human security often address the questions of *security for whom* and *from what* to distinguish between national and human security, less attention is paid to the questions of *by*

whom and *how*? I show that *security by whom* and *how* supply important insights for global policymaking on humanitarian-health crises.

SECURITY FOR WHOM?

Traditional definitions of national security are state-centered where the main objective is the protection of the state from real or perceived external security threats. National security requires the protection of national borders, populations, and territories from external threats; the state is most often, but not always, the principal actor that provides and ensures national security. Since the end of the Cold War, the field of security studies has both broadened to consider nonmilitary security threats, and deepened to include the security of groups other than the state.[6]

Human security considers security from the vantage point of the individual, expanding the notion of security beyond safety from violent threats to include economic, health and food security. The United Nations Development Programme (UNDP) defines human security as "safety from chronic threats such as hunger, disease and repression" and "protection from sudden and hurtful disruption in the patterns of daily life" in the areas of economic, food, health, environmental, personal, community, and political security.[7] The Commission on Human Security (CHS) defines human security as "the protection of the vital core of all human lives from critical and pervasive threats" where the rights and freedoms constituting the vital core pertain to survival, livelihood and basic human dignity. [8] King and Murray suggest that human security has four essential characteristics: it is universal, its components are interdependent, it is best ensured through prevention, and it is people-centered.[9] This people-centered focus is in theory what distinguishes human security from traditional security paradigms.[10] However, shifting the reference point of security from states to people does not diminish the role of the state in providing security, particularly in response to terror threats or food insecurity.[11]

While holding the UNSC presidency in 1999, Canada suggested a widening of the jurisdiction of the UNSC to include human security as well as national security.[12] Since then, Martin and Owen find that support from the primary proponents of the human security agenda, particularly the UN and the Canada, has waned. By 2005, UN Secretary General (UNSG) Annan stopped employing the term, referring instead to the responsibility to protect, and the UNSC paid less attention to HIV/AIDS as a core security issue, focusing on more traditional national security threats such as terrorism.[13]

SECURITY FROM WHAT?

How human security identifies the source of a threat is both its most defining and contested feature. The original UNDP report identified seven distinct dimensions of human security—economic, food, health, environmental, personal, community, and political—defining human security both as a "freedom from fear" and "freedom from want."[14] Proponents of a broad definition of human security suggest it entails more than safety from violent threats ("freedom from fear") to include chronic threats ("freedom from want").[15]

Scholars advance several critiques of the broad definition of human security. First, the broad definition generates a litany of possible threats, which diminishes its analytic value and makes prioritizing political action challenging.[16] Joshua Busby argues that non-traditional security threats are not unique to human security and shows that some non-military phenomena, like climate change, constitute national

security threats in their speed, intensity and ability to cause large-scale destruction and death.[17] The U.S. and European countries approached Ebola as a national security risk to some extent, and implemented quarantine, containment and crowd control policies to protect national borders and citizens from infection.[18]

Second, critics of the broad definition argue that empirical research is inhibited by apparent circular reasoning: human security is necessary for human development but the obverse is also true making it difficult to tease out how changes in socioeconomic factors might impact human security.[19] King and Murray propose however that the relationship between human security and human development is mutually reinforcing not causal; human security is a necessary, but not sufficient, precondition for human development.[20]

Narrow definitions of human security convey the urgency typically associated with security threats, but limit threats to their severity, rather than their cause.[21] Owen suggests that focusing on "critical and pervasive threats" establishes immediacy and scope and limits policy attention to those threats that become severe enough to warrant the 'security' label.[22] Focusing on *critical* threats differentiates between long-term structural problems, typically considered development issues, and sudden crisis-like disruption. *Pervasive* threats rise from and impact multiple areas of human security. Take the example of Ebola, political and economic factors like state incapacity and uneven development created conditions conducive to the spread of the disease and the pandemic impacted multiple areas of human security beyond health.

A final defining characteristic is *vulnerability,* defined by King and Murray as the number of years of future life spent outside a state of "generalized poverty;" security is based on the risk of severe deprivation and thus depends heavily on the concept of poverty.[23] Suhrke offers three categories of "vulnerable" populations, 1) victims of war and internal conflict, 2) those who live close to the subsistence level and thus are structurally positioned at the edge of socio-economic disaster and 3) victims of natural disasters.[24] In sum, a human security threat is a critical and pervasive threat to the lives of vulnerable populations.

SECURITY BY WHOM?

The question security by whom might be understood in two ways, who securitizes and who provides security?; each interpretation will be discussed in turn. If security remains dominated by states and associated with their self-interested motivations, then *who* labels an issue a security concern matters because it determines which issues appear on the global agenda.

For example, in the case of health, threats to the security of developed countries and their citizens are frequently prioritized in the international agenda.[25] Breslin and Christou suggest that some diseases (HIV/AIDS, SARS, etc.) only garnered global political attention when they traversed borders from the developing to the developed world.[26] Framing health crises as human security issues solely when developed countries are at risk shines inordinate amounts of attention on infectious and communicable diseases to the detriment of programs designed to address non-communicable health concerns and structural problems in health care systems. Securitization of infectious diseases such as H1N1 has also backfired, incentivizing non-cooperative behavior based on narrow calculations of national interest over international collaboration on health.[27] Finally, several negative repercussions might result from securitizing health issues such as HIV/AIDS: the public good might supplant the rights and civil liberties of individuals; securitizing an issue might draw

more resources and attention, but might shift resource allocation away from those in need to elites, armed forces and politically powerful groups; and finally, securitizing disease might generate new stigmas where disease-affected populations might be considered both health and security risks.[28]

Who provides security? Traditional views of security focus on using the military to ensure the territorial integrity of sovereign states and thus securitization is often associated with militarization. The real analytic value of human security is that it broadens consideration of who provides security—states and inter-governmental organizations as well as non-state actors, such as non-governmental organizations (NGOs), multi-national corporations, and diaspora groups—and how—through the fulcrum of human rights.

SECURITY HOW?

Human security's focus on the individual implies a rights-based approach to security, which proposes that human security can be achieved through human rights. Human security therefore suggests that multiple actors provide security based on a moral and legal obligation to uphold and protect human rights. While critical of human security, Howard-Hassman offers that "insofar as human security identifies new threats to well-being, new victims of those threats, new duties of states, or new mechanisms of dealing with threats at the inter-state level" it can add to the human rights regime.[29] She cautions that in order to uphold and not undermine human rights, states must protect the rights of their individual citizens and should not violate the civil liberties and rights of some individuals in the name of protection of the collective.[30] Moreover, human security enlarges states' responsibilities to include non-citizens, potentially enhancing human rights for stateless peoples who are no longer under the legal purview of a state.[31]

Human security implies mutual vulnerabilities and obligations and thus requires collective action. Axworthy articulates, "our own security is increasingly indivisible from that of our neighbors—at home and abroad. Globalization has made individual human suffering an irrevocable universal concern." [32] Viewed in this way, securitizing health enables and advances the human rights agenda by providing an opportunity for developing appropriate global governance solutions to ensure human security. Table 1 summarizes the discussion of the four guiding questions in this section and reflects general understandings of national and human security approaches to humanitarian-health crises.

A human security approach to humanitarian-health crises requires a systems-level response which coordinates the efforts—particularly information sharing, project planning, and needs assessment—of multiple actors based on actual human needs and human rights; encourages consideration and protection of the most vulnerable parts of the population—women, children, the disabled and the elderly—and emphasizes empowerment, which suggests a bottom-up approach that enables people and communities to act on their own behalf.[33] On this latter point, former UN High Commissioner for Refugees Sadako Ogata states "[Human security] is concerned not just with protection, but also with empowerment—making it possible for people to take an active role in making their lives and communities more secure."[34]

Human security and national approaches will also differ in their funding allocation and accountability mechanisms. When states design humanitarian activities aligned with their national security objectives, they channel funding through their own military, aid agency or national NGOs; prioritize bi-lateral aid; or

earmark aid for activities important to the national interest (i.e. vaccine development). A representative model of accountability, which requires elected officials to answer to their constituents and to adhere to legal standards, informs accountability systems in a national security approach.[35] For example, implementing bureaucracies, such as USAID or CDC, answer to Congress, which is accountable to the American electorate.

Table 1: Humanitarian Action Viewed through National and Human Security Lenses

		National Security	**Human Security**
Security for whom?		States	People
Security from what?		Traditional and non-traditional threats to the state	Critical and pervasive threats to vulnerable populations
Security by whom?		State military and police forces	States, international organizations, NGOs
Security how?	Objectives	Military action & health services in line with national security concerns	Military action & health services designed to stabilize situation; in line with the assessed needs of affected populations
	Principles	Aligned with national security agenda; collective rights supersede human rights	Humanitarian imperative, humanity, independence, impartiality; human rights respected
	Military role	Minimal coordination between foreign and national militaries; "top-down"	Foreign militaries coordinate with local military and government; "bottom-up"
	Funding	Bi-lateral funding; earmarked funding	Pooled funding disbursed in function of community needs
	Accountability	Democratic/political	Mutual

A human security approach to humanitarian-health crises requires pooled funding, via mechanisms such as a global fund, consolidated appeal, or trust fund that facilitate rapid disbursement in response to community needs not in service of national security interests. We would expect funding to be allocated to projects serving highly vulnerable populations and those demonstrating the greatest need. Accountability relationships in a human security approach reflect a model of mutual accountability defined as "accountability among autonomous actors that is grounded in shared values and visions and in relationships of mutual trust and influence."[36] Mutual accountability relationships involve the input of all parties, including affected populations and communities, in a multi-party social action.

UNMEER: GAME CHANGER OR MORE OF THE SAME?

The empirical case uses the four guiding questions from the previous section: *security for whom*, *from what, by whom* and *how*, to analyze and draw lessons from UNMEER. The UNSC declaration elevated the Ebola crisis to a security issue that demanded global attention; this was a watershed moment, but as the following discussion shows, the UN mission primarily espoused a traditional approach in responding to the crisis.[37]

SECURITY FROM WHAT?

How global actors define a security threat shapes their level and type of policy response. The UNSC unanimously adopted Resolution 2177—co-sponsored by 130 states—on the Ebola crisis in West Africa marking only the second time that it considered a public health problem and the first time a public health crisis was labeled *a threat to international peace and security*.[38] Samantha Power, U.S. Ambassador to the UN, remarked "Today's resolution has the most sponsors ever for any Security Council resolution in the history of the United Nations…" indicating "a degree of unanimity and unity that we rarely see."[39] Burci and Quirin contend that the resolution "represents the most cogent recognition to date of the security implications of widespread outbreaks of lethal infectious diseases."[40] In her address to the UNSC, WHO Director-General Dr. Margaret Chan acknowledged the pervasiveness of the threat, "None of us experienced in containing outbreaks has ever seen in our lifetimes an emergency on this scale, with such a degree of suffering and such a magnitude of cascading consequences. This is not just an outbreak; this is not just a public health crisis. This is a social crisis, a humanitarian crisis, an economic crisis and a threat to national security well beyond the outbreak zones."[41]

In subsequent UNSC meetings, Tayé-Brook Zerihoun the Assistant Secretary-General for Political Affairs and Marjon Kamara, Liberian Ambassador to the UN, expressed growing concern about the impact of the Ebola outbreak on regional peace and security.[42] Individual UN agencies and the EU also noted the pervasiveness of the threat, recognizing that the West African countries' recent history of conflict made them particularly vulnerable in multiple areas of human security.[43] The World Food Programme (WFP) warned of a major food crisis triggered by disruptions in regional aid, travel bans, quarantines, and farm laborer deaths, and distributed food aid to alleviate food insecurity.[44] Likewise, the World Bank highlighted the economic impact of the crisis, which increased economic insecurity by slowing economic growth, damaging key industries such as mining, agricultural and services, and raising prices of staple goods.[45]

As the outbreak progressed, it was essential for the UN to take highly visible action to galvanize the global community, generate political and financial support, prompt the deployment of military personnel, and intensify responses from UN agencies.[46] The subsequent establishment of UNMEER, as the first ever UN emergency health mission was a significant, but unprecedented innovation that neither conformed to the mandate of a traditional peacekeeping operation nor to a political mission.[47] Although the UNSC resolution labeled the crisis as a security threat, it was variably referred to as a 'health event' or a 'humanitarian disaster,' which provoked competing and uncoordinated responses to the crisis.[48]

Inconsistent labeling caused confusion as to which agency should lead the response and created a lack of clarity about roles and responsibilities. Although the UN's Office for the Coordination of Humanitarian Affairs' (OCHA) mandate is to

coordinate coherent responses to humanitarian emergencies, it did not lead in the initial stages of the outbreak.[49] OCHA viewed the Ebola crisis as a "systemic medical issue," while the WHO—the global health arm of the UN charged with coordinating global health emergencies and head agency of OCHA's global health cluster (GHC)—argued that the crisis demanded a response beyond its technical expertise.[50]

The cluster system includes 11 clusters—groups of humanitarian organizations, both UN and non-UN—in each of the main sectors of humanitarian action (i.e. health, emergency shelter, logistics). The objective of the cluster approach is to strengthen partnerships among these organizations to enhance the coordination of emergency response activities. The UNGA's Inter-Agency Standing Committee (IASC) designates global and country-level leadership in each cluster that is responsible for coordinating all available capacity and expertise. The WHO, in its role as head of the GHC, which includes over 30 partners, was in a prime position to leverage existing capacities and partnerships to accelerate the response.[51] Instead, the WHO's response was hampered by budget cuts, skewed donor priorities, weakened capacity, a decentralized organizational structure with highly autonomous regional offices and bureaucratic in-fighting and is widely viewed as having failed.[52] Evaluations of the response find that while the WHO provided high-level technical and strategic input and advice, its organizational culture was not adapted to coordinating large-scale, long-term, multi-country emergencies or to challenging its member states on non-compliance with International Health Regulations.[53] Furthermore, many UN agencies and INGOs possessed specialized knowledge of either health emergencies or humanitarian crises, but lacked crosscutting understandings across the two systems.[54] Despite an existing UN presence in the region, individual agencies were not equipped to respond; for example, the UN mission in Liberia (UNMIL) neither had a health services mandate nor training for a public health operation.[55]

Recognizing the failed leadership of the WHO, the UNSG created UNMEER to implement a system-wide response to the outbreak. The following section describes the main components of UNMEER and considers to what extent it might model a national or human security approach to humanitarian-health crises.

SECURITY BY WHOM AND HOW?

UNMEER was established in September 2014 following the unanimous adoption of both General Assembly resolution 69/1 and UNSC resolution 2177 (2014), as a temporary measure to provide leadership, operational direction and support to meet immediate needs related to the unprecedented fight against Ebola. Intended as a system-wide UN response, UNMEER bypassed OCHA, the UN's typical body for emergency coordination, and focused on the goal of containing the outbreak.[56] UNMEER streamlined the response by advancing and adopting a "health security" frame to guide intervention planning and deployed financial, logistical and human resources to Guinea, Liberia and Sierra Leone with the singular objective of containing the spread of the Ebola virus.[57] UNMEER established headquarters in Accra, Ghana and was comprised of four primary administrative pillars: (1) medical response; (2) operational coordination and planning; (3) essential services response; and (4) an in-country crisis response team in each country led by an Ebola Crisis Manager.[58]

UNSC Resolution 2177 granted UNMEER with both the authority and the ability to lead and coordinate the global response.[59] One month after its establishment, UNMEER convened the UN Ebola Response Operational Planning

Conference in Accra, Ghana to devise a plan for scaling up the United Nations-system response.[60] Development of the strategic plan reflects a top-down rather than bottom-up approach to planning because it was developed with input from the UN's Special Envoy for Ebola and representatives of the WHO but few representatives from the affected countries.[61]

To coordinate an efficient, coherent and comprehensive response, UNMEER detailed four Critical Actions and five Enabling Actions (Table 2) and assigned responsibility to a lead agency (WHO, International Federation of Red Cross, United Nations Children's Fund, WFP, UNDP and UNMEER) for each activity. For example, the WFP led the Logistics Cluster and provided services, such as storage, transport, coordination and information management, for the mission. UNMEER's five objectives and mission critical activities focused on stopping the spread of the virus and reflect a technical, medical oriented approach to achieve this mandate.[62]

Framing the outbreak as a health crisis had significant implications for the overarching response strategy; for one, UNMEER objectives primarily focused on implementing and funding health programs designed to end the Ebola outbreak at the expense of investing in health infrastructure or treatment for non-communicable or other infectious diseases. Ten out of the thirteen MCAs (Table 2) focus directly on disease containment and treatment and operational support. A technical and clinical approach dominated the early response with a heavy focus on measurable outputs such as constructing Ebola Treatment Units (ETUs), increasing bed capacity and fulfilling the 70-70-60 benchmark (70% of patients isolated and receiving care; 70% safe and dignified burials within 60 days of UNMEER roll out).[64] Moreover, the dominant health security frame meant that non-Ebola related assistance and protection activities for vulnerable populations, such as pre-natal and maternal care and child protection services, were not prioritized.

The global response to the Ebola outbreak included activity by a panoply of actors: bi-lateral aid agencies such as the United States Agency for International Development (USAID) and the United Kingdom's Department for International Development (DFID); domestic and transnational NGOs; private foundations; multi-national corporations; intergovernmental organizations such as the WHO, the World Bank and the UN; and advocacy groups. UNMEER's strategic plan enabled coordination of these various actors by assigning agencies with mission critical activities to which they were held accountable. For instance, the WHO led Case Management, which meant assigning responsibility to implementing agencies for each mission critical activity related to case management; overseeing 60 ETUs across the three affected countries as well as an estimated 2,500 international personnel deployed from more than 40 organizations and 58 foreign medical teams to operate the ETUs. [65] WHO also partnered with ministries of health and thousands of national staff to fulfill the requirements of this activity.

INGOs were important implementing partners and worked closely with UN agencies. Arriving first on the scene, MSF's experience and expertise in supplying acute medical assistance in crisis situations and developing countries was invaluable. MSF's safety protocols were relatively successful in protecting medical staff and patients and informed the development of operational standards and procedures used by U.S. AFRICOM troops.[66] Yet overall, the Ebola response involved a much smaller INGO presence than is typically the case in humanitarian emergencies, with a majority of staff recruited locally.[67] Several factors contributed to low levels of INGO presence; first, many emergency relief INGOs lacked the required medical knowledge, technical expertise, capacity to provide healthcare and necessary medical supplies. Second, for INGOs that specialize in emergency relief but not healthcare,

such as Oxfam, the convoluted framing of the crisis created confusion, and they struggled to find a constructive role in what was initially considered a medical emergency.[68] Finally, INGOs scrambled to recruit qualified individuals to deploy to West Africa with humanitarian personnel more willing to accept assignments in Iraq, Syria, Somalia and Afghanistan.[69]

Table 2: Overview of UNMEER[63]

Main Activities	Enabling Activities	Objectives (STEPP)	Mission Critical Actions (MCA)
1. Case finding (contact tracing, laboratory surveillance) 2. Case management 3. Community engagement & social mobilization 4. Safe & dignified burials	1. Logistics 2. Staffing and human resources 3. Training 4. Information management 5. Cash payments and coordination	**S**top the outbreak →	1. Identify and trace people with Ebola 2. Safe and dignified burials
		Treat the infected →	3. Care for persons with Ebola & infection control 4. Medical care for responders
		Ensure essential services →	5. Provision of food security & nutrition 6. Access to basic health services (non-Ebola) 7. Cash incentives for workers 8. Recovery & economy
		Preserve stability →	9. Reliable supplies of materials & equipment 10. Transport & fuel 11. Social mobilization & community engagement 12.Messaging
		Prevent further outbreaks →	13. Preventing spread

Though initial INGO mobilization was disappointing, subsequent INGO programs fostered community-building and bolstered the capacity of affected communities to prevent and manage Ebola transmission. Oxfam was pivotal in helping communities in Sierra Leone form Community Health Committees that analyzed barriers to disease prevention, case management and safe burials and then designed programs to overcome these factors. [70] The International Rescue Committee oversaw community care centers, collected data on active case hotspots, increased monitoring and oversight in some hotspots and referred cases to ETUs.[71] INGOs were therefore instrumental in bridging UNMEER with local communities and implementing a "bottom-up" approach consistent with human security. UNMEER claims that the areas where the community was educated and actively

engaged in the intervention exhibited the most success in reducing and eliminating the incidence of Ebola.[72] In a survey of 1,500 residents in Monrovia, Liberia, Tsai and colleagues found that community outreach had a positive impact on citizen cooperation and trust in state authorities.[73] Citizens who experienced outreach were more likely to support control policies, adopt preventative measures and cooperate with state authorities

The deployment of 2,900 AFRICOM military personnel from the US, 750 from the UK as well as approximately 720 civilian and military health workers deployed by the African Union as part of Operation African Union Support to Ebola Outbreak (ASEOWA) positively impacted the mobilization of the global response.[74] A MSF official, Brice de la Vingne states, "I will call it a game changer in the way that it helped trigger a bigger response from the international community, [...] the mere presence of American troops dissuaded average Liberians from blaming the deaths on a government conspiracy or witchcraft."[75] National military forces worked alongside foreign contingents; the Armed Forces of Liberia joined US military engineers to build four ETUs. The UK military collaborated with the armed forces of Sierra Leone (RSLAF) to run District Ebola Response Centers (DERC), maintain order by supporting police contingents, and provide logistical support.[76] DFID (UK) set up a joint military and humanitarian command and control hub–the Joint Inter Agency Task Force (JIATF)–to coordinate and collaborate with the Government of Sierra Leone to provide infrastructural support, commodities, training and management.[77]

Military engagement symbolized the commitment of international resources and a demonstration of goodwill, halted the exodus of INGOs from the region, encouraged a professional response with structured command and control arrangements, and provided high-quality treatment facilities, which reassured international agencies that deployed professional staff to the region.[78] In addition, militaries leveraged their comparative advantages and resources to build ETUs, train medical practitioners, coordinate responses, and supply essential telecommunications technology.[79] The UK military deployed army medics to train local health workers (clinicians, logisticians and cleaners) to work in UK-managed facilities.[80] The US military provided mobile health platforms, called *m*health, which use smart phone applications to collect, share and manage data for research and remote patient management; the Nigerian government has credited *m*health with enhancing its capacity to contain its Ebola outbreak.[81]

Nevertheless, foreign military forces were deeply criticized for being risk averse and not providing direct patient care, for being slow to mobilize and even slower to construct the ETUs averaging about three months to completion.[82] The tangible contribution of military forces to lowering transmission and infection rates, beyond the symbolic value of mobilizing resources, remains unclear. According to the WHO, illness rates began falling weeks before US troops completed their core missions of building ETUs and training staff, and the ten ETUs built by AFRICOM along with eight others funded by the US in Liberia went largely unused and some were even repurposed by the Liberian government.[83]

According to Table 1, another area where we would expect empirical differences in national versus human security approaches to humanitarian intervention is funding. Activities driven by national security objectives emphasize bi-lateral and earmarked funding tightly coupled with national security interests. By contrast, pooled funding allocated through community participation better serve human security objectives.

The international response to the Ebola outbreak received substantial funding

from multiple sources. As of January 31, 2015, USD 5.1 billion were made available to the Ebola intervention including contributions from governments (USD 3.2 billion), international financial institutions (1.6 billion), and private partners (USD 200 million).[84] Twenty-one private foundations contributed funding to the international response, five private foundations alone pledged USD 245 million.[85] Actual rates of disbursement provide a better sense of funding available to an emergency than pledged funding. The UN Special Envoy reports a 43% disbursement rate of pledged funding by December 22, 2014, rising to 49% by January 31, 2015.[86] As of November 2015, the Financial Tracking Service (FTS) of UN OCHA reports that USD 2.27 billion were requested for the Response Plan and $1.56 billion was received (69% of requested Response Plan funding).[87] According to the UN Special Envoy, the disbursement rate for the Ebola intervention is higher than in historical cases—for instance, the disbursement rate during the 2004 Asian tsunami was less than 30% after six months.[88]

Top donors donated in line with strategic objectives, contributing a significant portion of their pledged funding through bilateral assistance to long-time allies and former colonies rather than to global or regional efforts. For example, the U.S. pledged USD 939 million total to the Ebola response including USD 644 million in direct bilateral support for Liberia and the U.K. pledged USD 553 million including USD 460 million in direct bilateral support for Sierra Leone.[89] Governments and financial institutions allocated USD 1.4 billion to UN agencies and key INGOs to support global efforts. Compare this to the USD 1.12 billion in direct bilateral assistance the US and the UK allocated to Liberia and Sierra Leone alone.

In line with a human security approach, two notable funding mechanisms, the Ebola Response Multi-Partner Trust Fund (MPTF) and Quick Impact Projects (QIPs), enabled a coordinated, flexible system-wide response, facilitated rapid disbursement of funds to areas of demonstrated need, and empowered affected countries in the decision-making process for funding allocation.[90] The Ebola Response MPTF raised USD 140 million with main contributions from the UK (USD 32m), Sweden (USD 13m), and Germany (USD 12m).[91] Notably, the MPTF Advisory Committee, which makes decisions on funding allocation, includes both representatives of the three affected countries as well as donors (Sweden and the UK).

QIP funding was designed to provide flexibility to the response, adapt to needs as they arose and build district-level capacity towards stopping disease transmission. UNMEER developed comprehensive guidelines to plan, implement and monitor QIPs, which required the Ebola Crisis Managers in the affected countries to approve projects—for example, the provision of supply and condolence kits in Guinea, and strengthening local response capacity and information campaigns in Liberia—and sign a Memorandum of Understanding (MoU) with each implementing partner detailing project expectations. Completed monitoring forms were sent to the Chief of Mission Support who authorized payments.[92] The MoUs and monitoring forms established a chain of financial and performance accountability to UNMEER.

In sum, although disbursement rates indicate a notable level of financial mobilization and commitment, the majority of funding was allocated through bi-lateral assistance, which is consistent with a national security approach to humanitarian crises. The MPTF and QIPs are notable funding mechanisms designed to meet human security objectives—principally community participation in funding decisions—but were marginally funded in comparison to bi-lateral aid

A final difference in how national and human security approaches to humanitarian-health crises might differ is in their accountability systems. The

accountability mechanisms used by the UN and UNMEER conform to standard models of financial and performance accountability that emphasize reporting on short-term observable indicators of operational outputs and use of resources rather than long-term processes and impacts. A human security approach to humanitarian crises requires mechanisms and procedures of mutual accountability that emphasize the participation of all stakeholders—particularly affected populations and communities—in defining standards.

UNMEER possessed the authority to assign critical activities to lead agencies and establish an accountability chain for monitoring and verifying fulfillment of the activity. The UNSG's Chef de Cabinet, Susana Malcorra, chaired regular meetings with UNMEER, oversaw the activity of lead agencies and reported on the mission's progress and challenges to the UNSG. An UN Office of Internal Oversight Services (OIOS) audit evaluated UNMEER in two areas—governance and monitoring mechanisms and regulatory framework—to assess performance on operational and managerial indicators of regulatory and financial accountability. OIOS initially awarded UNMEER a "partially satisfactory" rating and eventually a "satisfactory" rating after UNMEER responded with modifications to its human resources management. In sum, UNMEER's reporting on compliance with financial, operational and regulatory standards emphasized traditional forms of representative or principal-agent accountability relationships—where government agencies report to their electorate and international organizations report to states—consistent with being accountable "up" the delegation chain, rather than "downward" to affected populations.

DISCUSSION AND CONCLUSIONS

The unprecedented UNSC resolution recognized the urgency of the public health crisis in West Africa, elevated a health security concern to the realm of global politics, and established the first-ever health mission. This article considers the implications of the UNSC's resolution and establishment of UNMEER for the future of humanitarian action. I conceptualize national and human security approaches to humanitarian intervention, discussing the implications for policy and then examine UNMEER using this lens. I find that UNMEER used a traditional security approach in its response to the Ebola outbreak: it was primarily organized around a health mandate and focused on the technical and medical aspects of disease containment; major donors contributed significant amounts in bilateral assistance to affected countries; and it emphasized compliance with financial and legal accountability standards.

Funding for the emergency shows progress towards better donor coordination around human security objectives; disbursement rates exceeded those in similar emergencies and together the MPTF and QIPs encouraged flexibility in programming and identification of community needs as they arose. Nevertheless, the majority of US and UK contributions still took the form of bilateral assistance to traditional allies rather than to the global efforts, suggesting that strategic interests drove some funding decisions. On balance, UNMEER was effective in meeting its mission of containing the Ebola virus and achieving zero new cases—as of this writing, the three affected countries were declared Ebola-free. UNMEER offers important lessons to guide and inform global responses to humanitarian-health crises.

First, empowered leadership improved coordination, fostered collaboration and improved accountability. In large-scale humanitarian crises, a lack of global leadership often impedes swift, coordinated responses as the initial faltering of the

WHO and OCHA demonstrates. The UNSG empowered UNMEER with special authority—not typically afforded to existing UN agencies—to hire staff, transfer assets, purchase materials and take action, which positioned it well to coordinate UN agencies.[93] This authority enabled UNMEER to catalyze financial and political support for a global response

Second, initial confusion regarding how to label the crisis and UNMEER's subsequent view of the outbreak as a public health emergency had several implications for coordination and leadership. For one, UNMEER focused narrowly on health targets providing much-needed standardization and professionalism; its STEPP approach viewed the crisis predominately through a public health lens. As such, it did not fully address a number of the wider social and economic consequences arising from the outbreak including the impact on food security and emergency shelter or the protection of vulnerable populations.[94] Revelations of an increase in gender-based violence, rape, and teen pregnancies during the Ebola emergency are one example of the cost of not viewing the crisis from the vantage point of individual security and vulnerability.[95]

Furthermore, the health security frame adopted by UNMEER sidelined use of a human rights-based approach to the crisis. The focus of the intervention and particularly the STEPP objectives was squarely on treating and containing individual cases of Ebola, which emphasized the technical, medical aspects of the emergency rather than humanitarian principles, individual rights and liberties, and culturally-sensitive practices. National policies, such as quarantines, restricted people's rights to liberty and freedom of movement and disproportionately impacted those unable to evade the restrictions, including the elderly, the poor, and people with chronic illness or disability.[96] Moreover, evidence for whether services provided by foreign militaries aligned with the assessed needs of affected populations is mixed. Certain contributions by foreign militaries, such as rapid tests and laboratories, training of medical staff, and mobile communication technology filled urgent and immediate needs. Yet, the risk-averse policies of foreign militaries meant that the most urgent need for medical care was only partially filled and that solidarity with affected populations was tempered by concerns for the safety of Western staff and personnel.

Third, engaging communities positively impacted intervention outcomes. The work of INGOs helped mobilize local communities, empowering them to design and implement programs, engage in critical public health education activities, disseminate information and incorporate local capacities into the global response. However, UNMEER inconsistently used a bottom-up approach. For instance, UNMEER's accountability mechanisms verified compliance with financial, legal and procedural rules and regulations, which privilege accountability "upwards" to donors and political authorities rather than accountability "downwards" to affected communities and people. While it can certainly be argued that bottom-up approaches might be time-consuming, expensive and further slow down decision making, examples such as the unneeded ETUs and the initial reluctance of communities to believe, trust and follow public health protocols, indicate that effectiveness might be increased through communication, consultation and dialogue with local populations.[97]

Why consider a human security approach to humanitarian-health crises and what does it bring to the policy table? It is important to note that I do not equate a human security approach with "good" and a traditional perspective with "bad" policy. Instead, the implicit assumption is that humanitarian-health crises will be a more common occurrence—as the ongoing Zika virus outbreak suggests—and thus require clear thinking about what kinds of global responses are needed.

A human security approach both stabilizes a crisis situation and addresses the sources of insecurity.[98] UNMEER impressively coordinated the technical and operational components of the global response to stabilize the situation, but did not adequately address the sources of insecurity. By drawing on the lessons learned from UNMEER and referring to existing initiatives in the humanitarian sector, the UNSC could further refine health missions to both stabilize crisis situations and address the root causes of humanitarian emergencies. These initiatives, including the Core Humanitarian Standard Alliance or the Paris Declaration on Aid Effectiveness (2005), are rights-based approaches that advance collective standards to coordinate organizational behavior and empower affected populations with the intention of increasing program effectiveness.

Maryam Deloffre *is an Assistant Professor of Political Science in the Department of Historical and Political Studies at Arcadia University.*

Acknowledgement*: I thank the editors of this special issue, the anonymous reviewers, and in particular Joshua Busby for insightful comments and suggestions that helped me improve the clarity and scope of this article. I am also especially grateful to the participants of the British International Studies Association NGO Working Group workshop NGOs in Global Governance, held in London, UK on June 15, 2015, for thought provoking discussions and commentary on this article. Cameron Allen, Maura Weaver and Samantha Wolk provided skillful research assistance and I thank Arcadia University for research support.*

---

[1] United States Centers for Disease Control, "2014 Ebola Outbreak in West Africa Situation Report." November 2, 2015. Available at: http://www.cdc.gov/vhf/ebola/outbreaks/2014-west-africa/index.html

[2] "Ebola Crisis: WHO Accused of 'failure' in Early Response." BBC News, October 17, 2014. Accessed 6/3/2015. Available at: http://www.bbc.com/news/world-africa-29668603; "Ebola: The Failures of the International Outbreak Response." Médecins Sans Frontières (MSF) International. August 29, 2014. Accessed 6/3/2015. Available at: http://www.msf.org/article/ebola-failures-international-outbreak-response ;"Statement on the 1st Meeting of the IHR Emergency Committee on the 2014 Ebola Outbreak in West Africa." World Health Organization. August 8, 2014. Accessed 6/3/2015. Available at: http://www.who.int/mediacentre/news/statements/2014/ebola-20140808/en/; Geoffrey York. "Only a Few Aid Agencies Willing to Help Fight Ebola in Africa." The Globe and Mail, October 3, 2014. Accessed 6/3/2015. Available at: http://www.theglobeandmail.com/news/world/aid-agencies-fail-to-mobilize-ebola-resources/article20930983/

[3] United Nations Security Council Resolution 2177, S/Res/2177 (2014), September 18, 2014.

[4] Anthony Banbury, United Nations Security Council Meeting 7279, S/PV.7279 (2014), October 14, 2014.

[5] Roland Paris, "Human Security: Paradigm Shift or Hot Air?," *International Security* 26, no. 2 (2001).

[6] Paris, "Paradigm Shift."

[7] United Nations Development Program, 1994. *Human Development Report*. New York.

[8] Sadako Ogata and Amartya Sen (2003). *Human Security Now*. Commission on Human Security, United Nations.; Sabina Alkire (2003). "A conceptual framework for human security." Working Paper No. 2, Centre for Research on Inequality, Human Security, and Ethnicity, CRISE. Queen Elizabeth House, University of Oxford; Mary Martin and Taylor Owen, "The Second Generation of Human Security: Lessons from the Un and Eu Experience," *International Affairs* 86, no. 1 (2010).

[9] Gary King and Christopher J. L. Murray, "Rethinking Human Security," *Political Science Quarterly* 116, no. 4 (2001-02): 589.
[10] Paris, "Paradigm Shift."
Taylor, Owen. "Human Security- Conflict, Critique and Consensus: Colloquium Remarks and Proposal for a Threshold-Based Definition." *Security Dialogue* 35, no. 3 (2004): 373-87.
Thomas, Nicholas, and William T. Tow. "The Utility of Human Security: Sovereignty and Humanitarian Intervention." *Security Dialogue* 33, no. 2 (2002): 177-92.
[11] Shaun Breslin and George Christou, "Has the Human Security Agenda Come of Age? Definitions, Discourses and Debates," *Comparative Politics* 21, no. 1 (2015): 7.
[12] Suhrke, "Human Security and the Interests," 266.
[13] Martin and Owen, "The Second Generation."; Colin McInnes and Simon Rushton, "HIV, AIDS and Security: Where Are We Now?," *International Affairs* 86, no. 1 (2010).
[14] Breslin and Christou, "Has human security," 2.
[15] Owen, "Human Security," 375; Martin and Owen, "The Second Generation."
[16] Owen, "Human Security," 378-379; Andrew Mack, "A Signifier of Shared Values," *Security Dialogue* 35, no. 3 (2004). ; Astri Suhrke, "Human Security and the Interests of States," 30, no. 3 (1999): 271.
[17] Joshua W. Busby, "Who Cares About the Weather?: Climate Change and U.S. National Security," *Security Studies* 17, no. 3 (2008), 475.
[18] Betsy Klein. "Ebola is a 'national security priority,' Obama says." September 8, 2014. Accessed 9/30/2014. Available at: http://www.cnn.com/2014/09/07/politics/ebola-national-security-obama/
[19] Suhrke, "Human Security and the Interests," 271; Paris, "Paradigm Shift,"; Mack, "A Signifier."
[20] King and Murray, "Rethinking Human Security," 590; Owen, "Human Security," 381.
[21] Owen, "Human Security," 381-82.
[22] Owen, "Human Security," 383; Martin and Owen, "The Second Generation," 221; Ramesh Thakur, "A Political Worldview," *Security Dialogue* 35, no. 3 (2004).
[23] King and Murray, "Rethinking Human Security," 585, 593.
[24] Suhrke, "Human Security and the Interests," 271-72.
[25] Olena Hankivsky. "Intersectionality and Ebola." *PS: Political Science & Politics* 48, no. 1: (2015): 14-15.
[26] Breslin and Christou, "Has human security," 3.
[27] Stefan Elbe."Haggling over viruses: the downside risks of securitizing infectious disease," Health Policy and Planning 25, no. 6 (2010).
[28] McInnes and Rushton, "HIV, AIDS and Security," 240.; Stefan Elbe, "Should HIV/AIDS be securitized? The ethical dilemmas of linking HIV/AIDS and security," *International Studies Quarterly*, 50, no. 1 (2006).
[29] Rhoda E. Howard-Hassmann, "Human Security: Undermining Human Rights?," *Human Rights Quarterly* 34(2012): 89.
[30] Howard-Hassmann, "Undermining Human Rights," 95; Elbe, "Should HIV/AIDS be securitized?"
[31] Howard-Hassmann, "Undermining Human Rights," 96.
[32] Lloyd Axworthy, "Human Security and Global Governance: Putting People First," *Global Governance* 7, no. 1 (2001): 20. See also Lisk et al., "Health and human security," 29.
[33] Mary Kaldor, *Human Security*, Cambridge, UK: Policy, 2007; Madoka Futamura, Christopher Hobson and Nicholas Turner. "Natural Disasters and Human Security." United Nations University, April 29, 2011. Accessed on 11/12/2015. Available at: http://unu.edu/publications/articles/natural-disasters-and-human-security.html.
[34] Sadako Ogata. "Human Security—A New Response to Common Threats." The Huffington Post, May 01, 2013. Accessed on 12/05/2015. Available at: http://www.huffingtonpost.com/A-View-from-the-United-Nations-/human-security----a-new-r_b_3195120.html.
[35] L. David Brown, *Creating Credibility: Legitimacy and Accountability for Transnational Civil Society* , Sterling, VA: Kumarian Press, 2008.; Derrick W. Brinkerhoff, 'Accountability and Health Systems: Toward Conceptual Clarity and Policy Relevance,' *Health Policy and Planning*, 19:6 (2004), pp. 371-379.
[36] L. David Brown, 'Multiparty social action and mutual accountability', in Alnoor Ebrahim and Edward Weisband (eds), *Global Accountabilities: Participation, Pluralism, and Public Ethics*, Cambridge, U.K.: Cambridge University Press, 2007, 95; Maryam Z. Deloffre, "Global Accountability Communities: NGO self-regulation in the Humanitarian Sector." *Review of International Studies*, forthcoming 2016.
[37] Maryam Z. Deloffre. ""Will AFRICOM's Ebola response be a watershed moment for international action on human security?" The Monkey Cage, *The Washington Post*, September 29, 2014.
[38] United Nations Security Council. Resolution 2177, S/Res/2177, September 18, 2014;

Maryam Z. Deloffre, "Human Security, Humanitarian Response and Ebola," *PS: Political Science & Politics*, 48 (1): 13-14.
[39] Samantha Power. United Nations Security Council Meeting 7268, S/PV.7268 Transcript, September 18, 2014: 8.
[40] Burci, Gina L., and Jakob Quirin. "Ebola, WHO, and the United Nations: Convergence of Global Public Health and International Peace and Security." Insights 18, no. 25 (2014). Accessed 6/6/2015. Available at: http://www.asil.org/insights/volume/18/issue/25/ebola-who-and-united-nations-convergence-global-public-health-and
[41] Margaret Chan. United Nations Security Council Meeting 7268, S/PV.7268 Transcript, September 18, 2014: 5.
[42] United National Security Council Meeting 7279, S/PV.7279 Transcript, October 14, 2014: 7-8, 11-12.
[43] European Parliament, "West Africa's Ebola outbreak is a global security issue, says Parliament." September 18, 2014. Accessed 10/30/2015. Available at: http://www.europarl.europa.eu/news/en/news-room/content/20140915IPR62603/html/West-Africa%E2%80%99s-Ebola-outbreak-is-a-global-security-issue-says-Parliament; Philippa Atkinson. "The Ebola Crisis: Exposing the Failures of Local and Global Governance." Open Democracy. August 20, 2014. Accessed 6/21/2015. Available at: https://www.opendemocracy.net/philippa-atkinson/ebola-crisis-exposing-failures-of-local-and-global-governance.
[44] Edith M. Lederer. "Ebola escalation could trigger major food crisis." The Globe and Mail. October 16, 2014. Accessed 10/24/2015. Available at: http://www.theglobeandmail.com/news/world/ebola-escalation-could-trigger-major-food-crisis/article21122975/
[45] "Ebola: Economic Impact Already Serious; Could Be "Catastrophic" Without Swift Response." The World Bank. September 17, 2014. Accessed 6/21/2015. Available at: http://www.worldbank.org/en/news/press-release/2014/09/17/ebola-economic-impact-serious-catastrophic-swift-response-countries-international-community-world-bank.
Adam Nossiter. "Ebola Is Taking a Second Toll, on Economies." *The New York Times*, September 5, 2014. 6/21/2015. Available at: http://www.nytimes.com/2014/09/06/world/africa/ebola-hurting-african-economies.html?_r=1
[46] World Health Organization, "Report of the Ebola Interim Assessment Panel." July 2015. Accessed on 10/10/2015. Available at: http://www.who.int/csr/resources/publications/ebola/ebola-panel-report/en/
[47] Burci and Quirin, "Ebola, WHO and the United Nations."
[48] Adam Kamradt-Scott et al., "Saving Lives: The Civil-Military Response to the 2014 Ebola Outbreak in West Africa," (University of Sydney: University of Sydney, 2015): 20.
[49] Jeffrey Gettleman. "As Ebola Rages, Poor Planning Thwarts Efforts." *The New York Times*, December 6, 2014. Accessed 5/12/2015. Available at: http://www.nytimes.com/2014/12/07/world/africa/as-ebola-rages-in-sierra-leone-poor-planning-thwarts-efforts.html
[50] Sheri Fink. "Cuts at W.H.O. Hurt Response to Ebola Crisis." *The New York Times*, September 3, 2014. Accessed 10/28/2014. Available at: http://www.nytimes.com/2014/09/04/world/africa/cuts-at-who-hurt-response-to-ebola-crisis.html; International Crisis Group. "The Politics Behind the Ebola Crisis." Crisis Group Africa Report No. 232, October 28, 2015: 21.
[51] WHO, "The Cluster Approach," Accessed 10/16/2015. Available at: http://www.who.int/hac/techguidance/tools/manuals/who_field_handbook/annex_7/en/; WHO, "Global Health Cluster Partners," Accessed 10/16/2015; Available at: http://www.who.int/hac/global_health_cluster/about/partners/en/
[52] Joshua Busby and Karen Grépin, "What Accounts for the World Health Organization's Failure on Ebola?" PS: Political Science and Politics 48, no. 1 (2015): 12-13.
Jeremy, Youde. 2015. "Why proposed WHO reforms aren't enough to deal with the next epidemic." *The Washington Post,* May 26. Accessed 6/3/2015. Available at: http://www.washingtonpost.com/blogs/monkey-cage/wp/2015/05/26/why-proposed-who-reforms-arent-enough-to-deal-with-the-next-epidemic/; Kamradt-Scott et al., "Saving Lives."
[53] WHO, "Interim Panel."; Suerie Moon et. al. "Will Ebola Change the Game? Ten Essential Reforms Before the Next Pandemic. The report of the Harvard-LSHTM independent panel on the global response to Ebola." The Lancet November 22, 2015.; WHO. "The Role of the WHO within the United Nations Mission for Ebola Emergency Response." April, 2015: 5-6. Accessed 10/10/2015. Available at: http://www.who.int/csr/resources/publications/ebola/who-unmeer/en/
[54] WHO, "Interim Panel," 7.
[55] International Crisis Group, "The Politics Behind," 20.
[56] Moon et. al. "Will Ebola change the game?"; International Crisis Group "The Politics Behind": 20.

[57] United Nations General Assembly (UNGA). "A/69/404 United Nations Mission for Ebola Emergency Response and the Office of the Special Envoy on Ebola." September 24, 2014; Global Ebola Response. "UNMEER." Accessed 11/12/2015. Available at: http://ebolaresponse.un.org/un-mission-ebola-emergency-response-unmeer
[58] UNGA "A/69/404."
[59] Office of Internal Oversight Services (OIOS). "Audit of the United Nations Mission for Ebola Emergency Response." Report 2015/199, October 14, 2015: 3.
[60] UNGA "A/69/404" 2-3; United Nations. "Ebola Outbreak: Updated overview of needs and requirements for January-June 2015." Accessed on 12/10/2015. Available at: http://reliefweb.int/sites/reliefweb.int/files/resources/updated_overview_of_needs_and_requirements_for_january-june_2015_0.pdf
[61] Marc Dubois, Caitlin Wake, Scarlett Sturridge and Christina Bennett. "The Ebola response in West Africa: Exposing the politics and culture of international aid." Humanitarian Policy Group (HPG) Working Paper, Overseas Development Institute October 2015, 25-26.
[62] Dubois et al. "The Ebola response in West Africa," 25-26.
[63] Global Ebola Response "UNMEER."; UNGA "A/69/404."; OIOS "Audit of UNMEER."
[64] Dubois et al. "The Ebola response in West Africa"; Institute of Development Studies. "Written Evidence Submitted to International Development Committee U.K. Parliament." Accessed on 11/20/2015. Available at: http://data.parliament.uk/writtenevidence/committeeevidence.svc/evidencedocument/international-development-committee/responses-to-the-ebola-crisis-followup/written/21202.html
[65] World Health Organization. "Strategic Response Plan: West Africa Ebola Outbreak." 2015. Accessed: 12/10/2015. Available at: http://apps.who.int/iris/bitstream/10665/163360/1/9789241508698_eng.pdf
[66] Robyn Dixon. (2014, October 16). Aid group has set the gold standard on Ebola safety. *Los Angeles Times*. Accessed: 1/15/2015. Available at: http://www.latimes.com/world/africa/la-fg-ebola-doctors-without-borders-20141016-story.html; United States Department of Defense. (2014, October 7). Department of Defense press briefing by General Rodriguez in the Pentagon Briefing Room [Transcript]. Accessed: 1/15/2015. Available at: http://www.defense.gov/Transcripts/Transcriptaspx?TranscripID=5515.
[67] Clara Hawkshaw, "Training on the Frontline in the Ebola Response," *Humanitarian Exchange* 2015.
[68] Catherine Meredith, "A Bottom-up Approach to the Ebola Response."; Medecins Sans Frontieres, "Pushed Beyond the Limit and Beyond: A year into the largest ever Ebola Outbreak." March 2015. Accessed on 10/12/2015. Available at: http://www.msf.org/sites/msf.org/files/msf1yearebolareport_en_230315.pdf.
[69] Kamradt-Scott et al., "Saving Lives," 8; Dubois et al. "The Ebola response in West Africa," 20.
[70] Meredith, "A Bottom-Up Approach."
[71] Meredith, "A Bottom-Up Approach."
[72] Meredith, "A Bottom-Up Approach."
[73] Lily Tsai, Robert Blair, and Benjamin Morse, "Patterns of Trust and Compliance in the Fight Against Ebola: Results from a Population-based Survey of Monrovia, Liberia." *International Growth Center,* April 2015. Accessed 3/5/2016. Available at: http://www.theigc.org/wp-content/uploads/2015/05/Economic-impacts-of-Ebola-Bulletin-3.pdf
[74] Kamradt-Scott et al. "Saving Lives."
[75] Gregg Zoroya. 2015. "Military Ebola mission in Liberia coming to an end." USA Today, February 5, 2015. Accessed 10/20/2015. Available at: http://www.usatoday.com/story/news/world/2015/02/04/ebola-army-troops-liberia-usaid/22694031/; Medecins Sans Frontieres, "Pushed Beyond the Limit."
[76] Institute of Development Studies. "Written Evidence."
[77] Department for International Development. "Written evidence."
[78] Kamradt-Scott et al. "Saving Lives"; Zoroya, "Military Ebola mission."; Andre Heller Perache, "To Put out This Fire, We Must Run into the Burning Building': A Review of MSF's Call for Biological Containment Teams in West Africa," *Humanitarian Exchange* 2015.
[79] WHO, "Interim Report."; Josiah Kaplan and Evan Easton-Calabria, "Military Medical Innovation and the Ebola Response: A Unique Space for Humanitarian Civil-Military Engagement," *Humanitarian Exchange* 2015.
[80] Department for International Development. "Written evidence submitted to the International Development Committee, House of Commons." Accessed on 11/12/2015. Available at: http://data.parliament.uk/writtenevidence/committeeevidence.svc/evidencedocument/international-development-committee/ebola-and-iraq/written/16074.html

[81] Kaplan and Easton-Calabria, "Military Medical Innovation."
[82] Kamradt-Scott et al., "Saving Lives"; Perache, "To Put out This Fire."
[83] Zoroya, "Military Ebola mission."
[84] UN Office of the Special Envoy on Ebola. "Resources for Results III." February 25, 2015 (update April 7, 2015), 7.
[85] The FTS provides the most comprehensive real-time data on humanitarian funding, however it most likely underestimates giving because the data is self-reported. Financial Tracking Service, "Ebola Virus Outbreak: Table B Total funding per donor (appeal plus other)" October 30, 2015. Available at: https://fts.unocha.org/reports/daily/ocha_R24_E16506___1510302003.pdf; Balboa and Deloffre, "Policymaking."; UN Special Envoy on Ebola, "Resources for Results III," 8.
[86] UN Special Envoy on Ebola, "Resources for Results III," 9.
[87] UN OCHA, Financial Tracking Service. "Ebola Virus Outbreak: West Africa." Accessed 11/1/2015. Available at: https://fts.unocha.org/pageloader.aspx?page=emerg-emergencyDetails&emergID=16506
[88] UN Special Envoy on Ebola, "Resources for Results III," 9.
[89] UN Special Envoy on Ebola, "Resources for Results III," 11-12.
[90] UN Ebola Response Multi-Partner Trust Fund. "Interim Report October 2014-January 2015." Accessed on 12/10/2015. Available at: http://mptf.undp.org/ebola.
[91] UN Special Envoy on Ebola, "Resources for Results III," 14.
[92] UN Ebola Response Multi-Partner Trust Fund, "Interim Report."
[93] Banbury, "United Nations Security Council Meeting 7279," 3.; International Crisis Group, "The Politics Behind."; OIOS "Audit of UNMEER."
[94] Kamradt-Scott et al., "Saving Lives," 9, 21; Clea Kahn, "Ebola and Humanitarian Protection;" See however UN Ebola Response Multi-Partner Trust Fund, "Interim Report," 32..
[95] Seema Yasmin. "The Ebola Rape Epidemic No One's Talking about." Foreign Policy, February 2, 2016.
[96] Human Rights Watch. "West Africa: Respect Rights in Ebola Response." September 15, 2014.
[97] Tsai et al., "Patterns of Trust."
[98] Kaldor, *Human Security*.

Lessons from Liberia:
Global Health Governance in the Post-Ebola Paradigm

Tim Mackey

Liberia is a country that has arguably borne the largest brunt of the 2014 Ebola Virus disease (EVD) outbreak, with the highest number of fatalities of all countries since the outbreak began in late March 2014. Though significant progress has been made in halting the spread of the disease, declarations by the World Health Organization that the country was "Ebola free" have been cut-short by detection of new cases, raising concerns that the country and greater region are still in ongoing danger during the post-pandemic phase of the outbreak. More importantly, the unprecedented nature of the Liberian EVD outbreak provides a compelling case study exposing the fragilities of international responses to global public health emergencies. Hence, this commentary will explore lessons learned from Ebola in Liberia and how they could affect the WHO, the International Health Regulations, and the future landscape of global health governance.

INTRODUCTION

On May 9, 2015, the country of Liberia was first declared free of Ebola virus disease (EVD) transmission by the World Health Organization (WHO).[1] The milestone declaration came after a forty-two day period of no new cases reported, following the burial of the last laboratory-confirmed case of the disease in March 2015.[1,2] "Getting to zero" was a monumental task for a country whose public health system had suffered decades of neglect following civil war, political strife, and economic instability.[3,4] However, the proclamation by WHO that Liberia was "Ebola free" turned out to be short-lived, with the detection of a new EVD-confirmed death on June 29th of a 17-year old boy in rural Margibi County and eventually detection of six new laboratory-confirmed cases .[5] On September 3, 2015, Liberia was once again declared EVD transmission free by WHO.[5,6] Yet, during the 90 day period of heighted surveillance that followed, this second declaration was also brief, with the Liberian Ministry of Health and Social Welfare (MOH) confirming on November 20th that it has detected yet another group of three new EVD cases.[7] On January 14, 2016, for a third time, WHO declared that known EVD chains of transmission in the country had come to an end, but cautioned that continued flare-ups were expected. Reflecting the unrelenting reality of the ongoing risk of re-emergence, in April 2016, a new case of EVD was detected in a 30-year old woman who died from the disease.

The repeated setbacks for Liberia in combating EVD present a compelling case study and metaphor for a global health governance system in need of serious reform. Specifically, the historic and unprecedented nature of the outbreak exposes the fragilities of current international responses to global public health emergencies, though these limitations had been evident in a 21st century that has been marketed by sentinel infectious disease outbreak events including SARS and the H1N1. It also necessitates an analysis of how challenges experienced in local response efforts are impacted by systematic failures of global health coordination and governance of health. This specifically includes assessing the impact of EVD on the future role of the WHO, an institution once at the center of international health but which now

finds itself the subject of widespread criticism regarding its leadership and handling of the outbreak.[8-11]

The outbreak also demands a review of how the International Health Regulations (IHR) has failed to deliver an international disease surveillance mechanism needed to protect global society in an era of a globalized pathogen. The IHR, as revised in 2005 following the SARS outbreak, represents the chief normative international instrument tasked with responding to public health emergencies, such as EVD, but has had questionable effectiveness in adequately responding to novel and re-emerging infectious disease events. This despite that fact that international recognition of the importance of the concept of "shared" global health security is at an all-time high.

Hence, this commentary explores lessons learned from the Ebola response in Liberia; how the country was impacted by macro failures of governance for global health, and how these lessons will affect the future of WHO, the IHR, and future global health governance reform.

EVD IN LIBERIA

On March 30, 2014, Liberia reported its first two positive Ebola cases from Lofa County, a region in the northernmost part of the country bordering both Guinea and Sierra Leone.[12] In accordance with reporting obligations under the IHR, the MOH of Liberia communicated with WHO and neighboring countries in order to coordinate EVD outbreak response efforts in an effort to contain the early spread of the disease. In early May, Liberia reported only a few new cases and in the same month WHO declared that the outbreak was slowing down.[1,13] However, a second wave of Ebola was emerging beyond the view of public health professionals, leading to the eventual spread of EVD to the capital, Monrovia (end of May), and to 10 of 15 counties (by August) culminating in a July 11 declaration by Médecins Sans Frontières (MSF), who had active personnel/operations on the ground, that the outbreak was spiraling out of control.[9,12] What followed was the EVD death of one of Liberia's most prominent physicians, medical evacuation of two U.S. healthcare workers infected by the disease, and a closing of border crossings, schools, and suspension of flights by certain airline carriers to the country.[14,15]

On August 8, 2014, nearly 5 months after international spread of EVD, the WHO declared a "Public Health Emergency of an International Concern" (PHEIC) under the IHR.[3] WHO's PHEIC declaration empowers the WHO Director-General, through consultation with the IHR Emergency Committee, to categorize an outbreak as an "extraordinary" public health event and issue temporary recommendations (e.g. health measures, health workforce issues, travel advisories, disaster/emergency response processes, border/travel screenings.)[16] While multiple observers criticized the WHO for the PHEIC declaration delay, previous Ebola outbreaks had been effectively managed by localized humanitarian aid and public health responses, and hence, many global public health authorities did not view this Ebola outbreak as a viable pathogen source for a potential catastrophic global epidemic. As a result, robust international response to the EVD outbreak in Liberia was fractured and delayed, leading to a peak transmission period of 300-400 new cases per week between August and September 2014, eventual transmission to all 15 Liberian counties, and several outbreaks in remote areas of the country.[1,12,17] This was also accompanied by isolated incidents of violent protests, widespread quarantines (including a nationwide curfew), and shortages of fuel, food, and other basic supplies following suspension of flights/trade.[18]

In order to effectively respond to the devastating and rapid escalation of the outbreak, massive deployment and rapid scale-up of response efforts commenced. This included a combination of constructing and staffing of Ebola treatment units (ETUs), use of community care centers, and use of isolation wards as an integrated strategy to improve clinical management, infection control, and outbreak control.[19-21] By November 2014, the number of newly reported cases began to decline, with reports of empty beds in treatment centers, with WHO and the MOH citing community engagement and health behavior change (including practicing safe burials and a government order to cremate victim remains) as likely reasons for the observed decline.[22] Other studies have also indicated the important role played by changing cultural practices and beliefs through effective health promotion and education and conducting response activities transparently with active community engagement as essential in interrupting EVD transmission in the country.[2,20,23,24] These efforts led to a gradual waning of the outbreak, with reports from WHO and the U.S. Centers for Disease Control and Prevention (CDC) in November 2014 that the number of new cases was experiencing evidence of decline nationally, and the restriction of new cases to two Liberian counties in January 2015.[20]

Fast forward to May 2015, with the first declaration by WHO that Liberia was "Ebola Free," and the country appeared to finally be closing the chapter on this difficult period in its modern history. However, the June and November 2015 detections of new cases (including the death of the 15-year old boy diagnosed with the disease in November) and later detected cases, highlights the resilience of this devastating disease's ability to re-emerge, and how much remains unknown about how it incubates in its host and remains transmissible.[25] In total, the unresolved 2014 Liberian EVD outbreak represents a critical setback in the country's efforts towards achieving needed political reform, economic development, and has inflicted immense human suffering on this already fragile and war-torn country.[4,26] With over 10,000 cases (the second most cases behind Sierra Leone) and approximately 4,800 deaths, Liberia has been disproportionately impacted by EVD, with the highest number of fatalities of all countries since the outbreak began in late March 2014.[24,27]

LESSONS FROM LIBERIA

A critical component of how Liberia successfully interrupted and contained the transmission of one of the most complex disease outbreaks in modern history was the "on-the-ground" US Government-Liberia-WHO global health partnership intervention that followed the peak of the EVD outbreak in Liberia. Specifically, progress towards zero was achieved largely in part due to the establishment of an Inter-Agency Health Team (IAHT,) representing a partnership including the U.S. Department of State, the CDC, the U.S. Department of Defense (DOD), and the U.S. Agency for International Development (USAID), which worked directly with the Liberian MOH and WHO to provide technical assistance in addressing the outbreak and promoting full implementation of IHR 2005. Partnership activities included development of a national strategy for the Rapid Isolation and Treatment of Ebola (RITE) targeted at addressing the unique challenges and complexities of outbreaks in remote areas through coordination of technical and operational assistance among partners.[28] Other bilateral and multilateral technical assistance to MOH was also instrumental, including CDC field teams that provided support for logistics, CDC's help in establishing and managing the outbreak through an incident management system, CDC support of multidisciplinary teams of domestic and international

partners for rapid response, and construction of treatment centers, setting up mobile laboratories and training of healthcare workers by the U.S. military,.[29-32]

However, despite the relative success of these multi-stakeholder partnerships involving the USG, Liberian government and WHO, the EVD outbreak nevertheless exposes inherent weakness of a fragile and underfunded health system that facilitated the spread of the outbreak as well as the lack of effective global health governance needed to mobilize international action to prevent, control and combat infectious disease outbreaks in resource-poor countries. Specifically, there remains no formalized governance mechanism to facilitate the mobilization of partnerships (such as the IAHT) needed to immediately respond to a public health emergency. Further, the critical need to build sustainable health system capacity in order to prevent and ensure that current and future outbreaks are properly controlled has yet to be appropriately addressed by a permanent and sustainable response apparatus within the WHO or broader UN system (though reform measures for WHO emergency response are underway.) Additionally, in the case of Liberia, the country's health system infrastructure, logistics, surveillance, communication, laboratory capacity, medical and drug supply systems, and emergency preparedness plans all had limited capacity *both* pre and during the EVD outbreak.[33] Hence, the combination of insufficient in-country health system capacity and difficulties in mobilizing an international response, provided a template for failure in containing a disease that previously was largely isolated to remote rural settings of Africa.

Specifically, from the perspective of national health capacity, health facilities in Liberia were inadequately equipped with occupational health and safety, waste management, personnel with necessary training, and adequate infection prevention and control measures to protect health workers and patients.[33,34] Preparedness and response measures were poorly coordinated with national authorities and county Health Teams, which are responsible for managing health services, but had limited resources/capacity as needed to be effective. At the outset of the outbreak, the national laboratory system could not diagnose Ebola and contact tracing was often delayed allowing further disease spread. During peak periods of the outbreak, international partners acted in haste to deploy treatment clinics and expand the number of beds needed to meet overwhelming demand to screen, treat, and quarantine suspected Ebola patients, with many of these facilities reaching capacity shortly after being opened.

The situation was made more precarious by the shortage of healthcare workers in the country (Liberia only had an estimated 130 doctors *prior* to the outbreak in 2006 to serve its population of 4.2 million.)[35] From January 2014 to March 2015, 288 confirmed cases of EVD have been reported among Liberian healthcare workers with an estimated 71% who have died from contracting the disease (representing an estimated 8% of *all* healthcare workers.)[36] This figure includes 83 doctors, nurses, and midwives that have lost their lives, resulting in models that show substantial increases (111% in Liberia) in future maternal mortality rates impending the country's ability to meet future international development targets.[36] This factor combined with limited supplies and lack of sufficient training, are key components in health system strengthening that remain serious obstacles and pose substantial risk for re-emergence of infectious diseases. Surveillance was also hindered by parallel, poorly-connected health information systems and underdeveloped vital statistics systems.[37] While Liberia has received an increase in external aid in recent years, most resources have been targeted towards specific Millennium Development Goals and vertical disease programs (e.g. HIV/AIDS,

malaria, and tuberculosis), largely neglecting the development of Liberia's health system.

Additionally, Liberia, as a WHO Member State, is party to the IHR and subject to its requirements to implement or meet certain core disease surveillance and response requirement.[3] The revision to the IHR in 2005 was intended to modernize the instrument after the 2002 SARS outbreak, with the aim of preventing, protecting against, controlling, and providing a robust public health response to the international spread of disease.[16] IHR requires State Parties to develop minimum core public health capacities and notify the WHO of events that may constitute a PHEIC according to defined criteria.[16] State Parties were required to meet IHR core requirements by 2012, but that deadline has been extended until 2019 following Ebola.[11] However, Liberia's limited resources and the lack of a funding mechanism for State Parties to implement IHR's requirements have delayed full implementation.[38-40] Hence, even though the IHR was revised to specifically address the international rise and spread of infectious diseases (such as Ebola) by requiring countries to bolster disease surveillance and public health preparedness capacity, it has thus far failed to bolster Liberia's health system capacity as necessary to prevent an epidemic.

In response, post-EVD, the Liberian MOH is now prioritizing IHR core capacities in its health systems recovery plan with planned investment in the following areas: health workforce, medical supplies and diagnostics, infrastructure and technology, information and communication, epidemic preparedness and response, community engagement, quality service delivery, leadership and governance, and sustainable health financing. The IAHT is a key partner supporting Liberia in developing core public health capacities in alignment with the IHR as well as the U.S.-led multi-stakeholder Global Health Security Agenda (GHSA).[39,40] The rapid spread and devastating human toll of EVD in Liberia also demonstrates that the virulence and transmissibility of disease must be considered within the context of the limitations of the local public health infrastructure in which it appears when determining if an outbreak is at risk of becoming a global health security threat or a PHEIC. An IHR criterion that is often neglected, paying particular attention to cases that present in places needing external assistance to effectively respond, should be a key consideration when determining whether or not to declare a PHEIC in the future.Now, more than a year and a half following the first cases of EVD, Liberia continues to detect new cases, hampering its progress towards reaching and maintain zero cases. Importantly, the continued persistence of EVD in Liberia may be emblematic of larger and more strutural challenges that are needed in global health governance that need to be addressed by the international community and cannot fall on the shoulders of individual states alone.[41] Based on this case study, the major factors, from a governance perspective, that appear to have exacerbated the spread of EVD in Liberia are highlighted in **Box 1** below. In extrapolating lessons learned from Ebola in Liberia, this commentary now focuses on the liklihood that these failings will be addressed and the adequacy of recommendations that have thus far been proposed within the context of current debate regarding the future of the WHO, the IHR, and broader global health governance reform.

Box 1: Key Challenges Highlighted in Liberia Case Study

- WHO budget needs more flexible funding mechanisms to respond quickly as well as instituting a proposed emergency fund
- WHO's decentralized structure inhibited its ability to act coherently, necessitating a critical evaluation of the WHO structure
- Delays in declaring a PHEIC negatively impacted Liberia and necessitates a reevaluation of IHR criteria
- Fragile health systems fuel the spread of disease and must be strengthened to prevent future epidemics
- An emergency health workforce could have prevented numerous national healthcare worker deaths and helped interrupt the epidemic, highlighting it as a critical component of global health preparedness

LESSONS FOR GLOBAL HEALTH GOVERNANCE

Even before the 2014 EVD outbreak, opinions on how to reform WHO were as varied as they were numerous. Post-Ebola, WHO reform is now at the center stage of the global health governance debate, with recommendations from at least four different independent assessments critically examining WHO's performance during the outbreak. This includes an independent panel of WHO-appointed experts (which released its final report in July 2015), an external independent panel organized by Harvard Global Health Institute and the London School of Hygiene & Tropical Medicine (Harvard-LSHTM Panel) (which recently published a set of 10 essential reforms in the *Lancet*) a multi-stakeholder expert commission with National Academy of Medicine as its Secretariat, and the Kikwete Panel organized by UN Secretary-General Ban Ki-moon. Though a full analysis of the current and pending recommendations made by these various panels is beyond the scope of this commentary, several reform measures address priority challenges as identified in the Liberia EVD case study (see **Table 1** for summary of select responses/recommendations.)

First and foremost, the EVD outbreak response in Liberia demonstrates the need for state governments, the USG, and the international community to bolster the WHO's financial and political independence so that it can fulfill its international mandate as a global leader in directing and coordinating international health efforts, a presence clearly lacking during the 2014 EVD outbreak. Central to this challenge is the fact that the WHO only controls a fraction of its budget as the majority of its financing comes in the form of "voluntary" contributions that are earmarked for special donor-funded projects, undermining its flexibility to meet rapidly changing health threats.[42] This is important as global health preparedness is contingent upon the immediate availability of funding and human resources that WHO currently lacks due to a freeze in necessary increases to member state assessments to its "core" budget that supports its normative functions.[11,43,44]

Table 1: Liberia Case Study Priority Challenges and Governance Responses

CHALLENGE	GOVERNANCE RESPONSE
Flexible WHO budget and emergency fund	1. Member states rejected proposed increase to WHO core budget but approved increase in voluntary contributions. Emergency fund agreed to in conjunction with formation of global health emergency workforce. 2. Development of new financing model for assessed contributions in conjunction with streamlining and focusing on WHO core functions and implementing good governance reforms.
Reform WHO's decentralized structure	No active or current commitment to reforms/reorganization
Reevaluation of IHR PHEIC criterion	1. IHR Review Committee will explore possible changes, including an intermediate level of alert. 2. Proposal that the IHR be revised to position emergency declarations within a politically protected Standing Emergency Committee chaired by WHO DG.
Address Fragile Health systems	1. Proposal to develop a cost plan to develop core capacities for all countries and partnering with the World Bank to develop financing mechanisms. 2. Calling for a clear global strategy to ensure investment in core capacities to detect, report, and respond rapidly to outbreaks and mobilizing external support to supplement efforts in poorer countries supported by a transparent central system for tracking and monitoring of results.
Establish emergency workforce	Agreed establishment of a contingency fund to be funded by voluntary contributions and plans by WHO to launch a global health emergency workforce by January 2016.

Sources: 68th World Health Assembly; WHO Ebola Interim Assessment Panel; Harvard – LSHTM Independent Panel

As a clear example of WHO's lack of capacity and necessary resources to respond to global health events, in 2014, WHO was put in the precarious situation of dealing with four Level Three humanitarian crises as well as three outbreaks (including EVD.) However, instead of ensuring adequate funding to support WHO's increasing responsibilities and mandates, stakeholders have focused on how to pursue institutional reform of the WHO and reassessing its fundamental role in global health without any additional funding to actually carry out necessary reforms. This is reflected by a rejection by member states of a proposal to increase WHO's core budget by 5% during the most recent 68th World Health Assembly, instead opting for an approval of an 8% increase in voluntary contributions.[43-45]

Further, the lack of sufficient personnel to scale-up coordination during a public health emergency needs to be addressed should WHO continue in its role as the lead health emergency response agency (as recommended by the interim panel appointed by WHO.)[46] Establishing a global health emergency workforce as has been proposed, backed by a contingency fund, could accelerate efforts following a declared PHEIC and provide an incentive for WHO and its regional offices to declare a PHEIC in a timely manner. This solution was actively discussed during the 68th World

Health Assembly, resulting in initial commitments to establish a contingency fund to be funded by voluntary contributions and plans by WHO to launch a global health emergency workforce by January 2016.[47] This initiative would leverage the backbone of WHO's existing networks including the Global Outbreak Alert and Response Network, the Global Health Cluster foreign medical teams, international non-governmental organizations, and its own outbreak and emergency response units, though its implementation remains to be seen.[10,44,46]

Failure to build national health system capacity also violates the fundamental principles of the IHR and left Liberia unable to effectively detect, assess, report, and respond to the EVD epidemic. In response, a health systems fund dedicated to fixing Liberia's structural health deficiencies, and those of other countries with similar vulnerabilities, may help avert future epidemics and enhance overall global health security. Recommendations to bolster health system capacity in the wake of Ebola have primarily focused on developing, building, strengthening, and sustaining IHR core capacities. This includes recommendations by the WHO Independent Panel to propose a plan measuring the cost for IHR core capacity development and partnering with the World Bank to explore financing options.[46]

Recommendations by the Harvard-LSHTM Panel also emphasized the need to develop a concrete plan to ensure that states invest in building and sustaining national core disease surveillance and response capacities, including under the IHR.[11] The report also highlighted the pragmatic need for mobilization of funding and exploration of investment mechanisms to provide external support for developing countries in these activities.[11] In response, the GHSA may represent a viable vehicle to fill this critical funding and IHR implementation gap, but only if sufficient international commitment and participation is achieved post-EVD. However, GHSA may also suffer from certain systematic deficiencies, including the voluntary nature of the initiative and its lack of a binding mechanism to ensure sustainable financing.

Most crucially, WHO urgently needs to explore changes to its PHEIC criterion, including further exploration of the concept of establishing an intermediate level of alert that would act as an earlier warning mechanism in lieu of a full PHEIC declaration, which was critically delayed and hampered international mobilization to the EVD outbreak.[47] According to leaked documents obtained by the Associated Press, fear of economic damage to affected countries was a key factor leading to the inexplicable delay by WHO HQ in issuing an EVD PHEIC declaration, although it was clear the outbreak was rapidly spreading out of control.[48] Hence, beyond the challenges of lack of health system/disease surveillance capacity and absence of funding for implementation, the EVD outbreak reveals a more fundamental challenge faced with the IHR: mainly balancing competing interests of public health responses with disruption on trade and economic growth.

Specifically, even if WHO and international partners establish an intermediate alert level and are able to secure increased funding in order to implement IHR core capacities, unwarranted disruptions in trade and travel that were unilaterally imposed against the most heavily impacted countries will undoubtedly hamper IHR compliance. Lessons should be learned from SARS and H1N1, where economic considerations also played a critical role in reporting and country responses to outbreaks.[16] Responses should include renewed focus on revising the IHR to ensure it has the necessary enforcement powers to disincentive countries and private parties from issuing unwarranted trade and travel restrictions and establishing a mechanism of trade or economic recourse for countries adversely impacted.[16]

CONCLUSION

The 2014 EVD outbreak represents an unparalleled global public health emergency that has claimed the lives of more than 11,000 people globally, led to widespread devastation of social, economic and health systems in the most severely affected countries in West Africa of Sierra Leone, Guinea and Liberia, and further demonstrates the uncontrolled threat posed by the globalization of infectious diseases.[49,50] Lessons from Liberia provide a roadmap for core governance reform measures that require prioritization by the WHO, its member states, global health stakeholders, and the broader international community in order to prevent the next global pandemic. Only time will tell if these governance reforms will be adequately adopted, financed and implemented in order to ensure that the countless lives lost and sacrifices made in Liberia and the greater Western African region lead to the urgent change needed for 21st century global health and not just another case study of failed global health governance.

Tim Mackey *is an Assistant Professor of Anesthesiology and Global Public Health at University of California, San Diego School of Medicine, the Associate Director for the UC San Diego MAS Program in Health Policy & Law, and the Director of the Global Health Policy Institute. He has also completed an Executive Course in Global Health Diplomacy at the Graduate Institute, Geneva, worked as a consultant for the World Health Organization, and acted as an expert speaker the U.S. Department of State. His work focuses on global health policy and governance.*

Acknowledgment: *The author would like to thank Matthew Brown, Assistant Professor at the Division of Global Health - Uniformed Services University for his helpful comments and insight in preparation of this manuscript.*

---

[1] The Ebola outbreak in Liberia is over [Internet]. WHO. World Health Organization; 2015 [cited 2015 Nov 23]. Available from: http://www.who.int/mediacentre/news/statements/2015/liberia-ends-ebola/en/

[2] Nyenswah T, Fallah M, Sieh S, Kollie K, Badio M, Gray A, et al. Controlling the last known cluster of Ebola virus disease - Liberia, January-February 2015. MMWR Morb Mortal Wkly Rep. 2015 May 15;64(18):500–4.

[3] Kouadio KI, Clement P, Bolongei J, Tamba A, Gasasira AN, Warsame A, et al. Epidemiological and Surveillance Response to Ebola Virus Disease Outbreak in Lofa County, Liberia (March-September, 2014); Lessons Learned. PLoS Curr. 2015;7.

[4] Stanturf JA, Goodrick SL, Warren ML, Charnley S, Stegall CM. Social Vulnerability and Ebola Virus Disease in Rural Liberia. Sankoh OA, editor. PLoS ONE. Public Library of Science; 2015;10(9):e0137208.

[5] Ebola transmission in Liberia over. Nation enters 90-day intensive surveillance period [Internet]. WHO. World Health Organization; 2015 [cited 2015 Nov 23]. Available from: http://www.who.int/mediacentre/news/statements/2015/ebola-transmission-over-liberia/en/

[6] Bawo L, Fallah M, Kateh F, Nagbe T, Clement P, Gasasira A, et al. Elimination of Ebola Virus Transmission in Liberia - September 3, 2015. MMWR Morb Mortal Wkly Rep. 2015;64(35):979–80.

[7] Gigova R. Ebola returns to Liberia months after nation declared free of virus [Internet]. 2015 [cited 2015 Nov 23]. Available from: http://www.cnn.com/2015/11/21/africa/liberia-ebola-return/index.html

[8] Maurice J. Expert panel slams WHO's poor showing against Ebola. The Lancet. Elsevier; 2015 Jul;386(9990):e1.

[9] Gostin LO. Reforming the World Health Organization after Ebola. JAMA : the journal of the American Medical Association. American Medical Association; 2015 Apr 14;:1407–8.
[10] Garrett L. Ebola's Lessons. Foreign Affairs. 2015 Aug 29;94:80–107.
[11] Moon S, Sridhar D, Pate MA, Jha AK, Clinton C, Delaunay S, et al. Will Ebola change the game? Ten essential reforms before the next pandemic. The report of the Harvard-LSHTM Independent Panel on the Global Response to Ebola. The Lancet. Elsevier; 2015 Nov;0(0).
[12] Lindblade KA, Kateh F, Nagbe TK, Neatherlin JC, Pillai SK, Attfield KR, et al. Decreased Ebola Transmission after Rapid Response to Outbreaks in Remote Areas, Liberia, 2014. Emerging Infectious Diseases. 2015 Oct;21(10):1800–7.
[13] Epidemiological update: Outbreak of Ebola... [Internet]. ecdc.europa.eu. 2014 [cited 2015 Nov 23]. Available from: http://ecdc.europa.eu/en/press/news/_layouts/forms/News_DispForm.aspx?List=8db7286c-fe2d-476c-9133-18ff4cb1b568&ID=1000
[14] Ebola outbreak: Liberia shuts most border points - BBC News [Internet]. bbc.com. 2014 [cited 2015 Dec 9]. Available from: http://www.bbc.com/news/world-africa-28522824
[15] Mugele J, Priest C. A Good Death — Ebola and Sacrifice. N Engl J Med. 2014 Sep 25;371(13):1185–7.
[16] Mackey TK, Liang BA. Lessons from SARS and H1N1/A: employing a WHO-WTO forum to promote optimal economic-public health pandemic response. J Public Health Policy. 2012 Feb;33(1):119–30.
[17] Summers A, Nyenswah TG, Montgomery JM, Neatherlin J, Tappero JW, T N, et al. Challenges in responding to the ebola epidemic - four rural counties, Liberia, August-November 2014. MMWR Morb Mortal Wkly Rep. 2014 Dec 19;63(50):1202–4.
[18] MacDougall C, Giahyue J. Liberia troops fire on protesters as West Africa's Ebola toll hits 1,350 [Internet]. reuters.com. 2014 [cited 2015 Dec 9]. Available from: http://www.reuters.com/article/us-health-ebola-liberia-protests-idUSKBN0GR12X20140827
[19] Logan G, Vora NM, Nyensuah TG, Gasasira A, Mott J, Walke H, et al. Establishment of a community care center for isolation and management of Ebola patients - Bomi County, Liberia, October 2014. MMWR Morb Mortal Wkly Rep. 2014 Nov 7;63(44):1010–2.
[20] Sharma A, Heijenberg N, Peter C, Bolongei J, Reeder B, Alpha T, et al. Evidence for a decrease in transmission of Ebola virus--Lofa County, Liberia, June 8-November 1, 2014. MMWR Morb Mortal Wkly Rep. 2014 Nov 21;63(46):1067–71.
[21] Washington ML, Meltzer ML, Centers for Disease Control and Prevention (CDC). Effectiveness of Ebola treatment units and community care centers - Liberia, September 23-October 31, 2014. MMWR Morb Mortal Wkly Rep. 2015 Jan 30;64(3):67–9.
[22] Gulland A. WHO reports decline in number of new Ebola cases in Liberia. BMJ : British Medical Journal. 2014;:g6542–2.
[23] Kobayashi M, Beer KD, Bjork A, Chatham-Stephens K, Cherry CC, Arzoaquoi S, et al. Community Knowledge, Attitudes, and Practices Regarding Ebola Virus Disease - Five Counties, Liberia, September-October, 2014. MMWR Morb Mortal Wkly Rep. 2015 Jul 10;64(26):714–8.
[24] Nyenswah T, Blackley DJ, Freeman T, Lindblade KA, Arzoaquoi SK, Mott JA, et al. Community quarantine to interrupt Ebola virus transmission - Mawah Village, Bong County, Liberia, August-October, 2014. MMWR Morb Mortal Wkly Rep. 2015 Feb 27;64(7):179–82.
[25] Saey T. Liberia's Ebola outbreak largely traced to one source [Internet]. sciencenews.org. 2015 [cited 2015 Dec 9]. Available from: https://www.sciencenews.org/article/liberia%E2%80%99s-ebola-outbreak-largely-traced-one-source
[26] Bowles J, Hjort J, Melvin T, Werker E. Ebola, jobs and economic activity in Liberia. J Epidemiol Community Health. 2015 Oct 5.
[27] Arwady MA, Bawo L, Hunter JC, Massaquoi M, Matanock A, Dahn B, et al. Evolution of ebola virus disease from exotic infection to global health priority, Liberia, mid-2014. Emerging Infectious Diseases. 2015 Apr;21(4):578–84.
[28] Kateh F, Nagbe T, Kieta A, Barskey A, Gasasira AN, Driscoll A, et al. Rapid response to Ebola outbreaks in remote areas - Liberia, July-November 2014. MMWR Morb Mortal Wkly Rep. 2015 Feb 27;64(7):188–92.
[29] Dopson SA, Rodriguez R, Rouse EN. Providing Logistics Support to CDC-Deployed Staff for the Ebola Response in Liberia, Guinea, and Sierra Leone. Health Promot Pract. SAGE Publications; 2015 Nov;16(6):792–5.
[30] Nyenswah T, Fahnbulleh M, Massaquoi M, Nagbe T, Bawo L, Falla JD, et al. Ebola epidemic--Liberia, March-October 2014. MMWR Morb Mortal Wkly Rep. 2014 Nov 21;63(46):1082–6.
[31] Blackley DJ, Lindblade KA, Kateh F, Broyles LN, Westercamp M, Neatherlin JC, et al. Rapid intervention to reduce Ebola transmission in a remote village - Gbarpolu County, Liberia, 2014. MMWR Morb Mortal Wkly Rep. 2015 Feb 27;64(7):175–8.

[32] Beaubien J. U.S. Military Response To Ebola Gains Momentum In Liberia [Internet]. npr.org. 2014 [cited 2015 Dec 9]. Available from: http://www.npr.org/sections/goatsandsoda/2014/11/05/361796044/u-s-military-response-to-ebola-gains-momentum-in-liberia
[33] Forrester JD, Pillai SK, Beer KD, Neatherlin J, Massaquoi M, Nyenswah TG, et al. Assessment of ebola virus disease, health care infrastructure, and preparedness - four counties,Southeastern Liberia, august 2014. MMWR Morb Mortal Wkly Rep. 2014 Oct 10;63(40):891–3.
[34] Forrester JD, Hunter JC, Pillai SK, Arwady MA, Ayscue P, Matanock A, et al. Cluster of Ebola cases among Liberian and U.S. health care workers in an Ebola treatment unit and adjacent hospital -- Liberia, 2014. MMWR Morb Mortal Wkly Rep. 2014 Oct 17;63(41):925–9.
[35] AFRO. Liberia WHO Country Office [Internet]. afro.who.int. [cited 2015 Dec 8]. Available from: http://www.afro.who.int/en/liberia/who-country-office-liberia.html
[36] Evans DK, Goldstein M, Popova A. Health-care worker mortality and the legacy of the Ebola epidemic. Lancet Glob Health. 2015 Aug;3(8):e439–40.
[37] Sieff K. Liberia already had only a few dozen home-grown doctors. Then came Ebola. [Internet]. washingtonpost.com. 2014 [cited 2015 Nov 23]. Available from: https://www.washingtonpost.com/world/africa/liberia-already-had-only-a-few-dozen-of-its-own-doctors-then-came-ebola/2014/10/11/dcf87c5c-50ac-11e4-aa5e-7153e466a02d_story.html
[38] Heymann DL, Chen L, Takemi K, Fidler DP, Tappero JW, Thomas MJ, et al. Global health security: the wider lessons from the west African Ebola virus disease epidemic. Lancet. 2015 May 9;385(9980):1884–901.
[39] Burkle FM. Global Health Security Demands a Strong International Health Regulations Treaty and Leadership From a Highly Resourced World Health Organization. Disaster Med Public Health Prep. Cambridge University Press; 2015 Feb 18;:1–13.
[40] Katz R, Dowell SF. Revising the International Health Regulations: call for a 2017 review conference. Lancet Glob Health. 2015 Jul;3(7):e352–3.
[41] Christie A, Davies-Wayne GJ, Cordier-Lasalle T, Blackley DJ, Laney AS, Williams DE, et al. Possible sexual transmission of Ebola virus - Liberia, 2015. MMWR Morb Mortal Wkly Rep. 2015 May 8;64(17):479–81.
[42] Mackey TK, Novotny TE. Improving United Nations Funding to Strengthen Global Health Governance: Amending the Helms–Biden Agreement. Global Health Governance. 2012.
[43] Kupferschmidt K. Global health. Report prescribes strong medicine for WHO. Science. American Association for the Advancement of Science; 2015 Jul 17;349(6245):223–4.
[44] Gostin LO. Critical Choices for the WHO After the Ebola Epidemic. JAMA : the journal of the American Medical Association. American Medical Association; 2015 Jul 14;:113–4.
[45] Kupferschmidt K. In wake of Ebola epidemic, Margaret Chan wants countries to put their money where their mouth is [Internet]. Science (New York, N.Y.). 2015 [cited 2015 Nov 24]. Available from: http://news.sciencemag.org/health/2015/10/wake-ebola-epidemic-margaret-chan-wants-countries-put-their-money-where-their-mouth
[46] Report of the Ebola Interim Assessment Panel [Internet]. WHO. 2015 [cited 2015 Jul 25]. Available from: http://www.who.int/csr/resources/publications/ebola/report-by-panel.pdf?ua=1
[47] WHO response to the Ebola Interim Assessment Panel report [Internet]. WHO. World Health Organization; 2015 [cited 2015 Jul 25]. Available from: http://www.who.int/mediacentre/news/statements/2015/ebola-panel-report/en/
[48] Boseley S. World Health Organisation “intentionally delayed declaring Ebola emergency” [Internet]. theguardian.com. 2015 [cited 2015 Dec 9]. Available from: http://www.theguardian.com/world/2015/mar/20/ebola-emergency-guinea-epidemic-who
[49] 2014 Ebola Outbreak in West Africa - Case Counts [Internet]. cdc.gov. [cited 2015 Jul 25]. Available from: http://www.cdc.gov/vhf/ebola/outbreaks/2014-west-africa/case-counts.html
[50] Gates B. The Next Epidemic — Lessons from Ebola. N Engl J Med. 2015 Mar 18;:150318040022001.

Let's not make the same mistake again: A political economy analysis of Sierra Leone's Cholera and Ebola epidemic responses

Rosalind McCollum and Miriam Taegtmeyer

The Ebola epidemic in West Africa resulted in calls for universal health coverage and revision of global health governance for emergency response. This political economy analysis identifies structural reasons why Sierra Leone and the international health community failed to respond in a timely and effective manner to the Cholera and Ebola epidemics or to translate learning from the Cholera epidemic to the Ebola response. The analysis considers how structural factors interact with stakeholder institutions' interests and power dynamics before it identifies potential solutions. We urge national and global decision makers to take concrete action to tackle underlying inequity within the global health system and address the root causes of populations' vulnerability to future infectious disease outbreaks.

FAMILIAR FAILINGS

Upon first observation Cholera and Ebola are vastly differing diseases. Cholera is a fast spreading disease, easily prevented by modern water treatment and health care. Meanwhile, Ebola is slower moving but not as easily treated.[i] However, both diseases have the ability to spread rapidly among poor populations who live in cramped, overcrowded homes, with inadequate access to clean water and sanitation. The poorest and most disadvantaged population groups have borne the brunt of the burden for both Cholera and Ebola. These are diseases of inequity, spreading rapidly in ill-prepared communities served by health systems with inadequate public health capacity. Cholera, a waterborne infectious disease and key indicator for lack of social development, is endemic among Sierra Leone, Guinea and Liberia. Sierra Leone is the worst affected country in the region experiencing it's largest Cholera outbreak in over 15 years in 2012.[ii]

Underlying the disease trajectories of both epidemics lie common failures and response features which resulted in delayed effective responses. This commentary will adopt a problem-driven political economy analysis based on the framework developed by Fritz, Levy and Or,[iii] see figure 1, which adapts and modifies the framework to respond to the question 'Why did Sierra Leone and the international community fail to respond to Cholera and Ebola epidemics in a timely and effective manner?'

The problem-driven political economy analysis focuses on identifying underlying structural factors which contributed to the delayed responses, identifying leading institutions and considering how these factors interact with stakeholder's interests and power. Finally, solutions will be identified, based upon lessons learned from common weaknesses in Sierra Leone's Cholera and Ebola responses and from review of proposals for revision of roles for leading global health actors.

STRUCTURAL AND INSTITUTIONAL FACTORS

This commentary will focus on three main structural and institutional factors: 1) Weak health system 2) Lack of community trust in the health system 3) Failure of national and international health communities to rapidly recognise the scale and implications of the Cholera and Ebola outbreaks and to institute required technical expertise.

1. WEAK HEALTH SYSTEM

Sierra Leone's civil war between 1991 and 2002 destroyed the health system. In the following years, Sierra Leone has sought to reform and reconstruct it's health system.[iv] However, maternal and child mortality rates remain alarmingly high (maternal mortality ratio 1165/100 000 live births and under five mortality rate 156/1000 live births based on Demographic Health Survey 2013).[v] Manifold gaps persist within all six health systems building blocks.

In the event of disease outbreak, there is need for pre-existing effective disease surveillance and vigilance, with effective health information systems and laboratory capacity to rapidly identify and diagnose cases and an ability to rapidly deploy contact tracing teams to line list contacts.

Cholera revealed Sierra Leone's limited availability of diagnostic facilities, challenges in data collection and reporting due to remoteness resulting in under-reporting of cases, poor surveillance communication among stakeholders, and limited community surveillance and notification capacity.[vi]

The failure to address these gaps was exposed with the arrival of Ebola. Despite the World Health Organisation (WHO) publishing confirmation of an Ebola case in neighbouring Guinea on 23rd March 2014, Sierra Leone did not immediately institute heightened surveillance[vii], providing time for the virus to spread unimpeded. Even as late in the response as January 2015 Medicins Sans Frontiers (MSF) reported there was 'almost no information sharing between the three most-affected countries' creating risk of cross border spread[viii]. Weak surveillance and contact tracing allowed continued transmission, through delayed early identification and isolation of cases during the peak of the outbreak and facilitated ongoing transmission during the many months of the fight to reach zero. As recently as 6th May 2015 Sierra Leone identified nine new cases in the preceding week, only two of which were identified as registered contacts of a previous case[ix].

Despite tripling the number of health workers between 2005 and 2010[x] Sierra Leone continues to be a human resources for health crisis country with only 0.2 physicians per 10,000 population and 1.7 nurses/midwives per 10,000 population (World Health Statistics 2014 cited)[xi], with the burden of the health worker deficit primarily borne in rural areas. In addition, while overall staff numbers increased there was actually a reduction in the number of disease control staff over the 2005 – 2010 timeframe[xii]. Not only this but health workers were inadequately prepared and trained to respond to an infectious disease outbreak. With a critical need identified for improved infection prevention and control (IPC) across all facilities and orientation of health workers in disease outbreak response and training and safe handling of dead bodies following the Cholera outbreak.[xiii]

Sierra Leone's lack of progress towards these IPC recommendations can be assumed to have directly contributed towards the infection of 304 health workers and the tragic death of 221 health workers from Ebola[xiv].

During the Ebola epidemic low absolute numbers of health workers limited the ability to respond to the Ebola epidemic and to continue to provide routine health services. Health workers were placed in an extremely difficult position of having to decide whether to continue to provide their patients with health services, despite having inadequate IPC training and a lack of personal protective equipment (PPE). Many health workers put their lives at risk, heroically providing services, despite the absence of protective measures. In October/November 2014, 5-6 months ***after*** the Ebola outbreak was declared in Sierra Leone, only 19% of peripheral health units (PHUs) had the minimum supply of essential IPC items, including PPE, and only 7% of PHUs had required IPC structures in place.[xv] This was despite lack of IPC supplies, absence of distribution plans and limited communication for supply chain having been identified as a major gap post Cholera epidemic.[xvi] Other frightened health workers stopped attending for work, rightly fearing for their safety. As a consequence some health facilities were forced to close.

2. LACK OF COMMUNITY TRUST IN THE HEALTH SYSTEM

Research conducted prior to the Ebola outbreak in Sierra Leone revealed a pervasive lack of accountability in the health sector at all levels, with women and children routinely having to pay for services despite being entitled to free care through the 2010 Free Health Care Initiative.[xvii]

The absence of accountability and participation between community and health system was apparent during the Cholera outbreak. Involvement and mobilisation of local councils, district and chiefdom structures was deemed inadequate and the need for advance preventive activities (in areas as yet unaffected), with messaging and materials available in local languages was identified as a leading area for improvement.[xviii]

As a consequence of low accountability, the Ebola epidemic revealed the lack of trust between communities and their Government and health system, with people disbelieving official explanations about the existence of Ebola[xix], avoiding health facilities and actively resisting public health teams. [xxxxi]

The Government of Sierra Leone responded with a range of authoritarian tactics such as 'cancelling Christmas', introducing curfews, lock-downs, house-to-house searches and enforced quarantines of entire regions. The top down messaging 'Ebola is real' and authoritarian interventions did not engage with underlying reasons for community mistrust and disbelief[xxii]. This initial response often blamed communities for continuing unsafe practices, such as avoiding treatment centres or conducting unsafe burials, without dealing with underlying cultural and religious beliefs and practices which explained reasoning for decisions. Subsequent reports have described how it was later in the response (when communities were engaged with in planning and there was collaboration with local stakeholders) that the approach of communities radically changed, with self-imposed quarantines organised by communities playing a significant role in stopping the epidemic[xxiii].

Following the onset of Ebola many patients feared attending health facilities and as a consequence the health implications spread far beyond the deaths directly resulting

from Ebola (a 20% increase in under-five mortality and 19% increased maternal mortality have been predicted as a result of health service interruptions).[xxiv]

3. FAILURE OF NATIONAL AND INTERNATIONAL COMMUNITIES TO RAPIDLY RECOGNISE THE SCALE AND IMPLICATIONS OF THE CHOLERA AND EBOLA OUTBREAKS AND TO INSTITUTE REQUIRED TECHNICAL EXPERTISE

Both disease outbreaks have been associated with delayed national (and in the case of Ebola International) recognition of the severity and scale of the outbreak. Figures 2 and 3 highlight the ***weekly*** case load for Cholera (figure 2) and Ebola (figure 3) in Sierra Leone. In both figures, the delayed National declaration of an emergency is visible, occurring only after cases had already started to increase. In 2012's Cholera outbreak President Koroma's declaration of a public health emergency and request for technical assistance did not occur until over eight months into the emergency, by which time the disease had already surged and risen exponentially with 12 out of 13 districts already reporting Cholera cases (Government of Sierra Leone 2012).

Similarly, during the Ebola epidemic the first case was confirmed in Guinea in March 2014 and subsequently spread to Sierra Leone, where the outbreak was declared on 26th May 2014. However, it was not until over two months later on 31st July, 2014 with over 500 ***cumulative*** cases nationally[xxv] that President Koroma declared a national state of emergency. It was over a week later on 8th August 2014 that the World Health Organisation (WHO) declared the outbreak a Public Health Emergency of International Concern, by which point cumulative cases in Sierra Leone had already surged to over 700[xxvi]. Districts reporting cases increased from 2/13 districts in June 2014 to 9/13 districts in August 2014 (district data unavailable for July 2014).[xxvii]

Failure to replace inexperienced staff within Government of Sierra Leone Ministry of Health and WHO in position at the onset of the outbreak, with more skilled technical expertise hampered the early stages of the response. Reliance of Government of Sierra Leone on advice from a stakeholder with no prior experience in responding to an Ebola outbreak, resulted in underestimation of the scale of the outbreak and failure to respond appropriately during crucial early stages. Basic disease outbreak response measures, such as contact tracing were not conducted during this crucial timeframe, resulting in many cases going undetected and allowing the disease to spread[xxviii].

Delayed acknowledgement of the severity of these outbreaks created a knock-on effect for mobilisation of international funds, with limited availability of funds during the early stages of the response (most funds for Cholera were released only after the President declared an emergency by which point the epidemic had already peaked (Government of Sierra Leone 2012)).

Meanwhile, the lack of a contingency fund for emergencies allowed Ebola to escalate. By the end of July 2014, only $7million had been contributed.[xxix] While international donations were subsequently pledged, by the end of December 2014 $2.89 billion had been pledged, but only $1.09 billion actually paid.[xxx]

INSTITUTIONS, STAKEHOLDER INTERESTS AND POWER

There are a range of stakeholders operating 1) within Sierra Leone and 2) internationally, whose interests, level of power and interactions have exerted influence over the response as identified in the structural features section.

1. STAKEHOLDERS WITHIN SIERRA LEONE

Leading stakeholders in Sierra Leone include the Government of Sierra Leone, Ministry of Health and Sanitation (national and district levels), private companies, non-governmental organisations (NGOs) and community leaders.

The Government of Sierra Leone's Ministry of Health and Sanitation's initial response to Ebola displayed a lack of urgency, with limited precautionary measures put in place prior to confirmation of the first case. The strength of pre-existing relationships resulted in the Government continuing to trust the advice of a small company with no previous experience in Ebola response[xxxi] over the advice of MSF, an international NGO which has responded to Ebola outbreaks for decades. The Minister of Health for Sierra Leone in place at the start of the outbreak demonstrated lack of capacity to coordinate and respond to a disease outbreak of this severity.[xxxii] However, President Koroma continued to back her (until 29th August when she was fired), rather than quickly putting in place someone with the skills and experience necessary to manage a response of this scale.[xxxiii] In addition, WHO were reported not to have addressed the lack of capacity, as a result those lacking capacity did not step aside to allow those with appropriate knowledge and skills to coordinate[xxxiv]. Furthermore, pre-existing disconnect between central and district health systems levels and poor central support to districts (such as limited human resource for health (HRH) management at district level, imprecise payroll resulting in non-payment of some health workers and delayed payment for performance) may have contributed to some of the response failings.[xxxv]

Previous research has documented that chronic government underfunding of district health management teams has created reliance on international NGOs for support.[xxxvi] Some scholars have theorised that heavy NGO involvement (within Liberia) may be a potential reason for delay in the control of the Ebola epidemic as a consequence of parallel communication channels from national to local health posts, with little strengthening of a centralised mechanism to channel information upwards and create a comprehensive surveillance mechanism.[xxxvii] This is in keeping with findings from the Cholera response which identified that response measures were ad hoc, driven by NGOs and that opportunities to support Sierra Leone's disaster management capacity and disease surveillance systems was partially missed (Government of Sierra Leone 2012).

Community leaders and community members – such as chiefs, traditional healers and religious leaders - were initially not regarded as key stakeholders and were inadequately engaged in the Ebola response. At the community level the lack of trust in government officials undermined initial attempts to control the outbreak, with communities doubting the truth of official explanations and continuing traditional practices.

However, community leaders and community members proved to be the most effective agents of change for community response.[xxxviii] Once engaged, communities instituted their own successful measures to control and stop the spread of Ebola.

2. INTERNATIONAL STAKEHOLDERS

WHO, World Bank, donor States, private companies, military and international NGOs have all been identified as playing influential roles in the response.
During the Ebola outbreak the initial response was largely led by MSF, who issued urgent calls for recognition of the scale of the problem and international assistance. However, these calls were at first ignored creating months of delays and resulting in the loss of many lives. [xxxix]

The WHO's delay in declaring a global health emergency, due to fear of damaging the economies of affected countries[xl], has been widely reported and criticised. When an emergency was finally declared previous WHO budget cuts resulting in loss of technical staff[xli] and internal limitations over budget control further hampered it's ability to respond.[xlii]

With delayed declaration of a global health emergency donor States initially delayed in mobilising funds and sending health workers to respond. Ebola was recognised as a threat to global security following spread outside West Africa (subsequent to confirmation of infection of two American medical missionaries on 26th July 2014). Ebola cases continued to surge and donor State's finally mobilised in fulfilling their duty to safeguard their population's health and to share international responsibility to fill capacity gaps[xliii], with military troops deployed from September 2014 (over ten months after the outbreak had originally begun).[xliv]

ANALYSIS OF POTENTIAL SOLUTIONS

Ebola has highlighted the need for a new approach to global health governance both at national and international levels. At national level, countries must incorporate lessons from the failings in response to Cholera and Ebola epidemics in Sierra Leone and learn from the relative successes of the Ebola response in Nigeria, Mali and Senegal, who had the benefit of hindsight forewarning their responses, following international declaration of an emergency. Structural weaknesses within health systems must be addressed through long-term commitment and investment in training, equipping and providing timely payment for health workers[xlv], heightened vigilance and disease surveillance, establishment of laboratory resources for rapid identification and diagnosis and pre-existing infrastructure and technologies to allow for rapid and rigorous contact tracing in the event of a disease outbreak[xlvi]. Any future response must include early community engagement with community leaders and community members which emphasizes community-led disease prevention[xlvii]. In addition, those in national positions of leadership must ensure that pre-existing staff who lack requisite skills and experience to coordinate an outbreak response step aside to allow technical experts to coordinate the disease outbreak response as required. Rapid release of emergency funds to facilitate timely response activities will be vital to facilitate these actions[xlviii]. However, adopting only these lessons will not combat underlying inequities in access to public health and essential medical services existing in Sierra Leone. Universal health

coverage requires that countries deliver effective health services that all people can access. Sierra Leone (Guinea and Liberia) have high poverty levels, fragile state systems and have neglected public health, making them vulnerable to health shocks[xlix]. For example according to 2012 data only 13% of Sierra Leone's population used an improved sanitation facility and only 60% used an improved drinking water source (World Health Statistics 2014 cited)[l]. The Sierra Leone Government had not invested in adequate public financing for health with government expenditure for health making only 16.2% of total expenditure (World Health Statistics 2014 cited)[li] and as a result could not provide effective health coverage, leaving the population vulnerable to Ebola. Given, increasing global interconnectedness the availability of accessible and universal health coverage in all countries must form the first line of defence against threats to health,[lii] because 'when it comes to the threat of infectious diseases, the world is only as secure as its weakest link'. [liii]

Sierra Leone must go further even than providing its citizens with universal health coverage. It must tackle the underlying lack of accountability between community and government (including health services). This will mean corruption must be addressed and investments need to be made in infrastructure, clean water and sanitation, agriculture, education and increasing the availability of employment in order to tackle underlying social determinants of health.

Internationally, there has been debate around 'options to strengthen global, regional and local systems to better prepare, detect and respond to epidemic diseases'[liv], including the need for an emergency contingency fund, global health workforce reserve, strengthened international health regulations and reform within WHO. [lv]

Throughout the Ebola pandemic there have been a large number of national and international responses. It is vital that this time lessons learned by those working to combat Ebola are captured effectively, shared globally and incorporated within health system planning worldwide to ensure better resilience when the next infectious disease outbreak occurs. Ebola has exposed frailties both within Sierra Leone, Liberia and Guinea and within the global health community. Opportunities to synergise with the new sustainable development goals should be exploited and accountability structures built so that every community is empowered to demand their right to health. Ebola has revealed the extent of global inequities which resulted in the deaths of over 11 000 people (World Health Organisation 2015) and the urgent need to 'strive for a world that is just, equitable and inclusive'.[lvi]

Rosalind McCollum *is a PhD student in the Department of International Public Health at the Liverpool School of Tropical Medicine.*

Miriam Taegtmeyer *is a Senior Clinical Lecturer in the Department of International Public Health at the Liverpool School of Tropical Medicine*

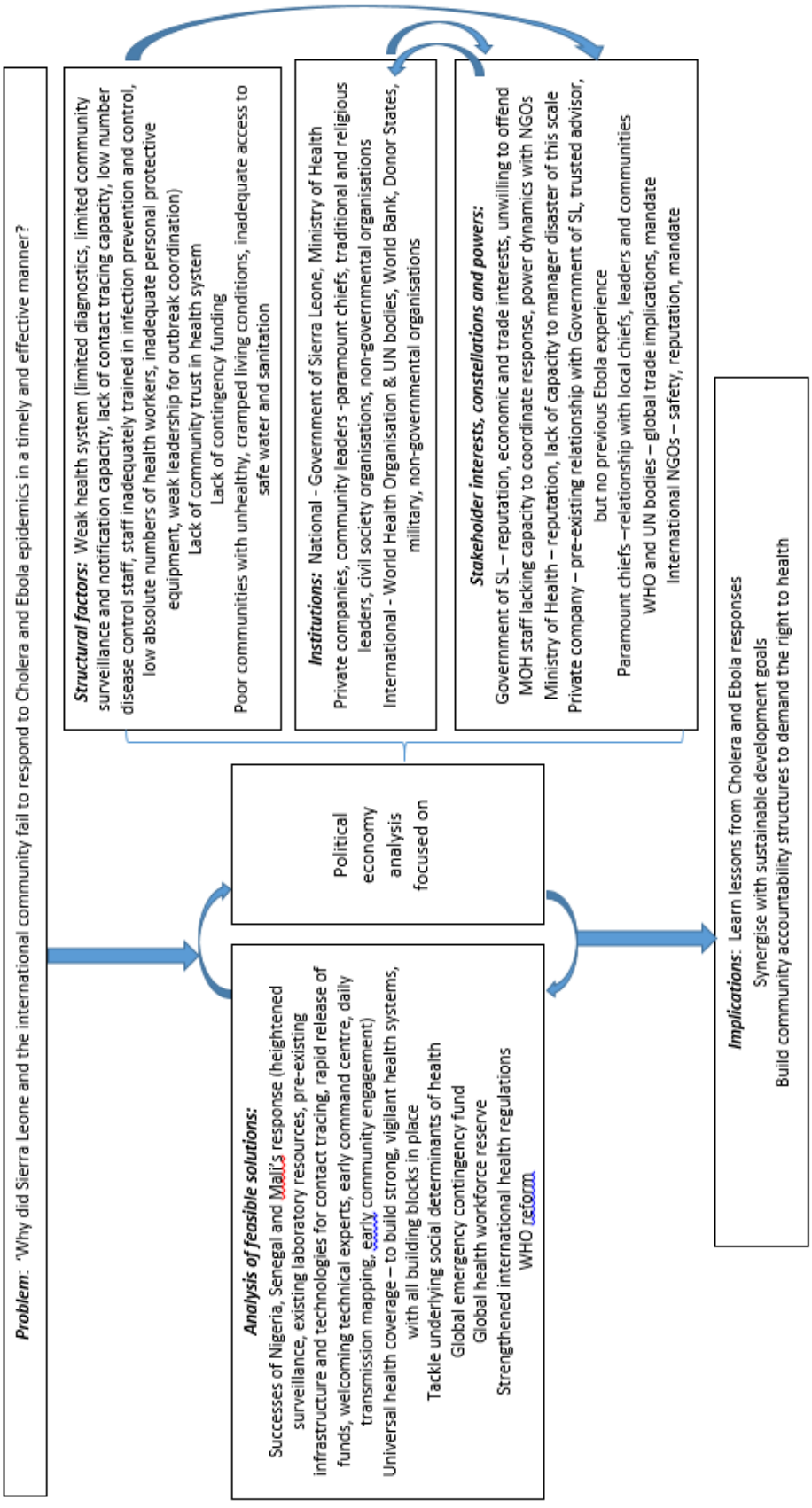


Figure 1 Modified problem-driven political economy analysis for Ebola response based on (Fritz, Levy, and Ort 2014)

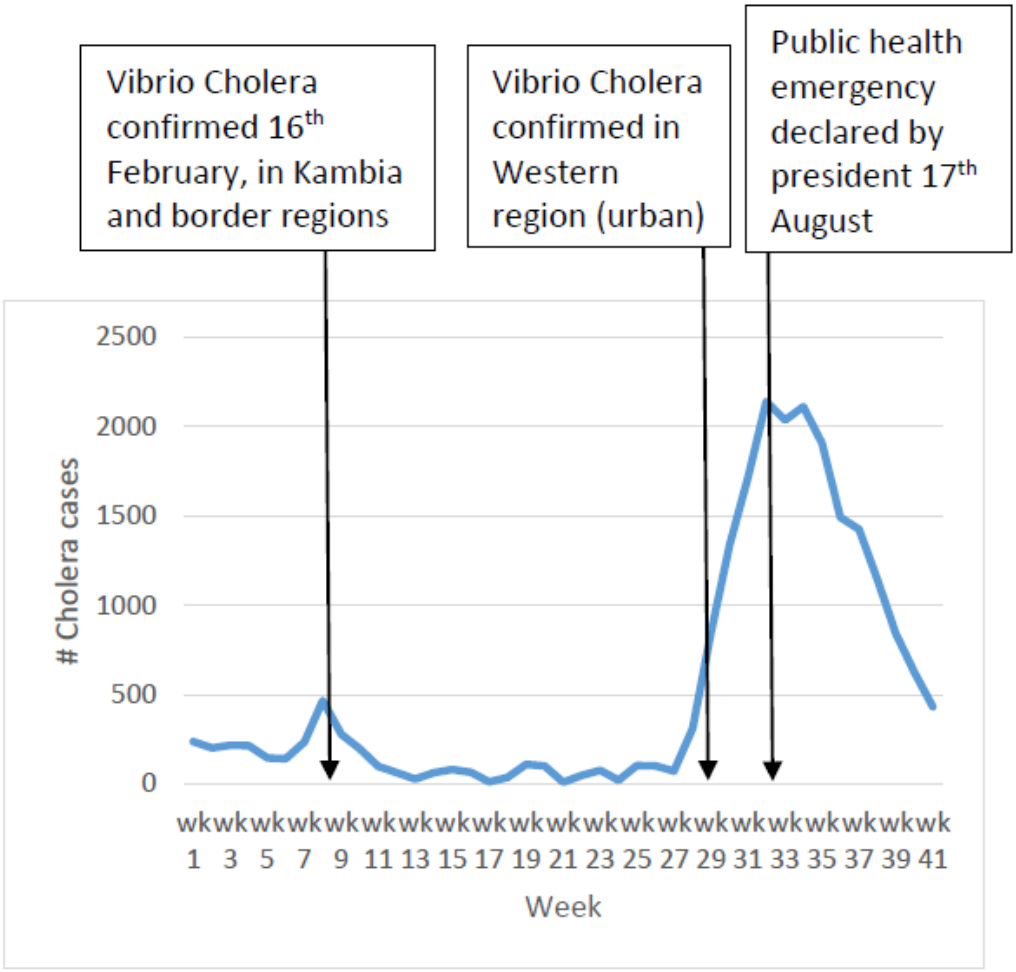


Figure 2 Timeline for weekly cases during Cholera outbreak, Sierra Leone 2012. Source (Oxfam 2013)

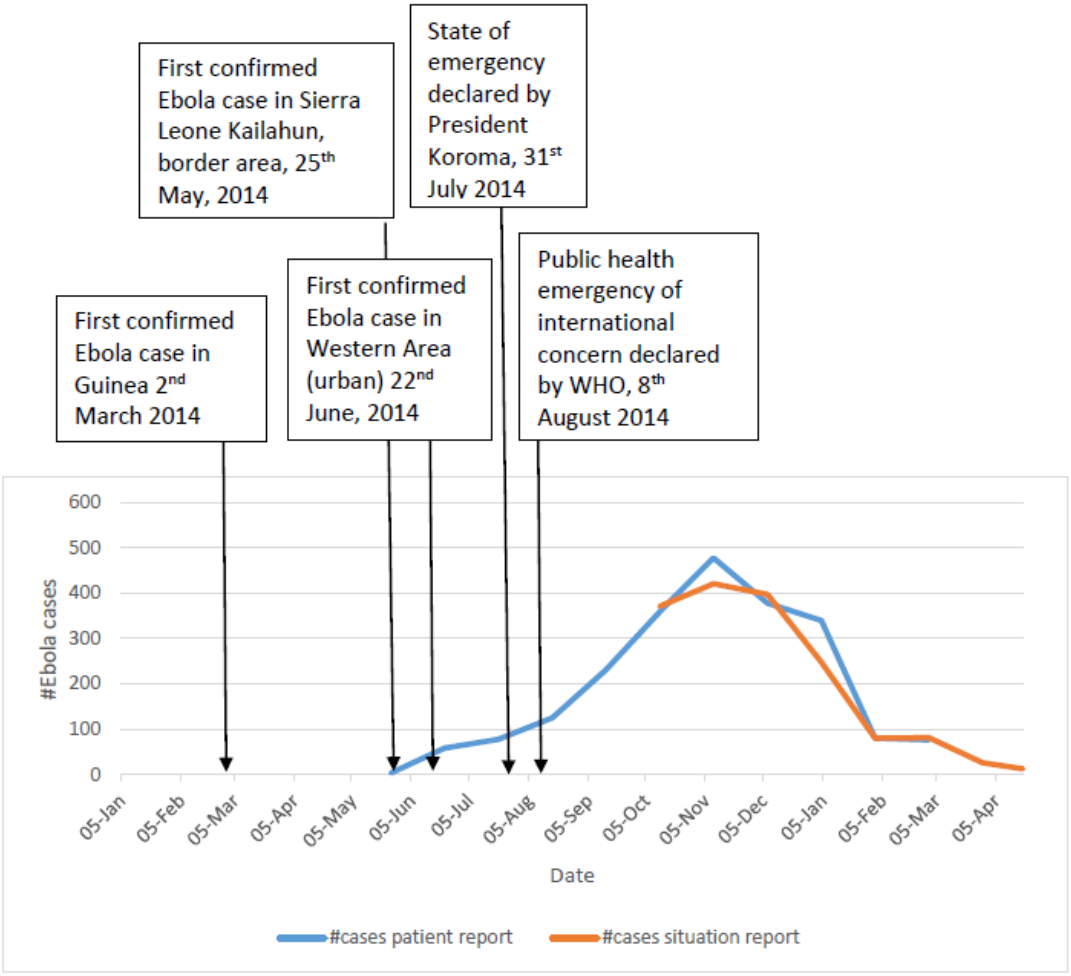


Figure 3 Timeline for weekly cases during Ebola outbreak, Sierra Leone January 2014 - April 2014.
Source (World Health Organisation 2015e)

[i] Quigley, Fran. 2014. "The Poor and the Sick: What Cholera and Ebola Have in Common." Foreign Affairs. https://www.foreignaffairs.com/articles/africa/2014-10-19/poor-and-sick.
[ii] Government of Sierra Leone. 2012. GOVERNMENT OF SIERRA LEONE Cholera Epidemic 2012 : Lessons Learned.
[iii] Fritz, Verena, Brian Levy, and Rachel Ort. 2014. Problem-Driven Political Economy Analysis:The World Bank's Experience. doi:10.1596/9781464801211.
[iv] Bertone, M. P., and S. Witter. 2015. "An Exploration of the Political Economy Dynamics Shaping Health Worker Incentives in Three Districts in Sierra Leone." Social Science & Medicine 141: 56–63.
[v] ICF Macro. 2013. Sierra Leone Demographic and Health Survey 2013. Vol. 36. doi:10.4324/9780203403099_Sierra_Leone.
[vi] Government of Sierra Leone. 2012. GOVERNMENT OF SIERRA LEONE Cholera Epidemic 2012 : Lessons Learned.
[vii] World Health Organisation. 2015. "Sierra Leone: A Slow Start to an Outbreak That Eventually Outpaced All Others." http://www.who.int/csr/disease/ebola/one-year-report/sierra-leone/en/.
[viii] Medicins Sans Frontieres. 2015. Ebola: Decline Encouraging, but Critical Gaps Remain. Medicins Sans Frontieres. http://www.msf.org/article/Ebola-decline-encouraging-critical-gaps-remain.
[ix] World Health Organisation. 2015b. "Ebola Situtation Report - 6 May 2015." http://apps.who.int/ebola/en/current-situation/ebola-situation-report-6-may-2015.
[x] Witter, S., H. Wurie, and M. P. Bertone. 2015. "The Free Health Care Initiative: How Has It Affected Health Workers in Sierra Leone?" Health Policy and Planning, 1–9. doi:10.1093/heapol/czv006.
[xi] Bloom, Gerald, Hayley MacGregor, Andrew McKenzie, and Emmanuel Sokpo. 2015. Strengthening Health Systems in Resilience. http://opendocs.ids.ac.uk/opendocs/bitstream/handle/123456789/5851/ID559 Online rev.pdf?sequence=1.
[xii] Witter, S., H. Wurie, and M. P. Bertone. 2015. "The Free Health Care Initiative: How Has It Affected Health Workers in Sierra Leone?" Health Policy and Planning, 1–9. doi:10.1093/heapol/czv006.
[xiii] Government of Sierra Leone. 2012. GOVERNMENT OF SIERRA LEONE Cholera Epidemic 2012 : Lessons Learned.
[xiv] World Health Organisation. 2015. "Ebola Situation Report - 3 June 2015." http://www.milbank.org/uploads/documents/HealthWorkerShortagehttp://apps.who.int/ebola/en/current-situation/ebola-situation-report-3-june-2015.
[xv] Centres for Disease Control and Prevention, Ebola Response Consortium, and Ministry of Health and Sanitation. 2015. INFECTION PREVENTION AND CONTROL (IPC) AND SCREENING OF SUSPECTED EBOLA CASES.
[xvi] Government of Sierra Leone. 2012. GOVERNMENT OF SIERRA LEONE Cholera Epidemic 2012 : Lessons Learned.
[xvii] [1] Pieterse, P., and T. Lodge. 2015. "When Free Healthcare Is Not Free. Corruption and Mistrust in Sierra Leone's Primary Healthcare System Immediately prior to the Ebola Outbreak." International Health, 1–5. doi:10.1093/inthealth/ihv024.
[xviii] Government of Sierra Leone. 2012. GOVERNMENT OF SIERRA LEONE Cholera Epidemic 2012 : Lessons Learned.
[xix] International Rescue Committee. 2014. Risking Repetition. http://www.rescue.org/sites/default/files/resource-file/IRC_EbolaBrief_20140302.pdf.
[xx] Bloom, Gerald, Hayley MacGregor, Andrew McKenzie, and Emmanuel Sokpo. 2015. Strengthening Health Systems in Resilience. http://opendocs.ids.ac.uk/opendocs/bitstream/handle/123456789/5851/ID559 Online rev.pdf?sequence=1.
[xxi] Oosterhoff, P., and A. Wilkinson. 2015. Local Engagement in Ebola Outbreaks and Beyond in Sierra Leone. http://opendocs.ids.ac.uk/opendocs/bitstream/handle/123456789/5857/ID565 Online.pdf;jsessionid=CDA6FD9F4EBE2F720D2EF52A2ED59D34?sequence=1.
[xxii] Oosterhoff, P., and A. Wilkinson. 2015. Local Engagement in Ebola Outbreaks and Beyond in Sierra Leone. http://opendocs.ids.ac.uk/opendocs/bitstream/handle/123456789/5857/ID565 Online.pdf;jsessionid=CDA6FD9F4EBE2F720D2EF52A2ED59D34?sequence=1.
[xxiii] International Rescue Committee. 2014. Risking Repetition. http://www.rescue.org/sites/default/files/resource-file/IRC_EbolaBrief_20140302.pdf.

[xxiv] Acaps. 2015. "Ebola in West Africa Impact on Health Systems," no. February. http://acaps.org/img/documents/b-20150226_ebola_health_system.pdf.
[xxv] World Health Organisation. 2014. "Ebola Virus Disease, West Africa – Update 31 July 2014." http://www.afro.who.int/en/clusters-a-programmes/dpc/epidemic-a-pandemic-alert-and-response/outbreak-news/4238-ebola-virus-disease-west-africa-31-july-2014.html.
[xxvi] World Health Organisation. 2014. "Ebola Virus Disease, West Africa – Update 8 August 2014." doi:10.1016/j.nurpra.2014.10.031.
[xxvii] BBC News. 2015. "Ebola: Mapping the Outbreak." BBC News. http://www.bbc.co.uk/news/world-africa-28755033.
[xxviii] Edge, Dan. 2015. "Outbreak." Frontline. http://www.pbs.org/wgbh/pages/frontline/health-science-technology/outbreak/transcript-81/.
[xxix] Gostin, Lawrence O, and Eric a Friedman. 2015. "A Retrospective and Prospective Analysis of the West African Ebola Virus Disease Epidemic: Robust National Health Systems at the Foundation and an Empowered WHO at the Apex." The Lancet 385 (9980). Elsevier Ltd: 1902–9. doi:10.1016/S0140-6736(15)60644-4.
[xxx] Grépin, Karen a. 2015. "International Donations to the Ebola Virus Outbreak: Too Little, Too Late?" Bmj 350 (February): 1–5. doi:10.1136/bmj.h376.
[xxxi] Edge, Dan. 2015. "Outbreak." Frontline. http://www.pbs.org/wgbh/pages/frontline/health-science-technology/outbreak/transcript-81/.
[xxxii] Sheppard-Barron, James. 2014. "Ebola: Most Unnatural of Disasters." The Lancet Global Health Blog. http://globalhealth.thelancet.com/2015/03/24/ebola-most-unnatural-disasters.
[xxxiii] Hitchen, Jamie. 2014. "Ebola in Sierra Leone: Political Leadership for a Crisis?" Africa Research Institute. http://www.africaresearchinstitute.org/blog/ebola-sierra-leone-politics/.
[xxxiv] Sheppard-Barron, James. 2014. "Ebola: Most Unnatural of Disasters." The Lancet Global Health Blog. http://globalhealth.thelancet.com/2015/03/24/ebola-most-unnatural-disasters.
[xxxv] Bertone, M. P., and S. Witter. 2015. "An Exploration of the Political Economy Dynamics Shaping Health Worker Incentives in Three Districts in Sierra Leone." Social Science & Medicine 141: 56–63.
[xxxvi] Bertone, M. P., and S. Witter. 2015. "An Exploration of the Political Economy Dynamics Shaping Health Worker Incentives in Three Districts in Sierra Leone." Social Science & Medicine 141: 56–63.
[xxxvii] Abramowitz, S.A. 2015. "How the Liberian Health Sector Became a Vector for Ebola." Cultural Anthropology. Accessed September 16. http://www.culanth.org/fieldsights/598-how-the-liberian-health-sector-became-a-vector-for-ebola.
[xxxviii] International Rescue Committee. 2014. Risking Repetition. http://www.rescue.org/sites/default/files/resource-file/IRC_EbolaBrief_20140302.pdf.
[xxxix] Medicins Sans Frontieres. 2015. Pushed to the Limit. http://www.msf.org.uk/sites/uk/files/ebola_-_pushed_to_the_limit_and_beyond.pdf.
[xl] Boseley, Sarah. 2015. "World Health Organisation 'Intentionally Delayed Declaring Ebola Emergency.'" The Guardian, March. http://www.theguardian.com/world/2015/mar/20/ebola-emergency-guinea-epidemic-who.
[xli] Gostin, Lawrence O, and Eric a Friedman. 2015. "A Retrospective and Prospective Analysis of the West African Ebola Virus Disease Epidemic: Robust National Health Systems at the Foundation and an Empowered WHO at the Apex." The Lancet 385 (9980). Elsevier Ltd: 1902–9. doi:10.1016/S0140-6736(15)60644-4.
[xlii] Elbe, Stefan, and Anne Roemer-Mahler. 2015. "Global Governance and the Limits of Health Security." Institute of Development Studies. http://opendocs.ids.ac.uk/opendocs/bitstream/handle/123456789/5850/ID558 Online.pdf?sequence=1.
[xliii] Gostin, Lawrence O, and Eric a Friedman. 2015. "A Retrospective and Prospective Analysis of the West African Ebola Virus Disease Epidemic: Robust National Health Systems at the Foundation and an Empowered WHO at the Apex." The Lancet 385 (9980). Elsevier Ltd: 1902–9. doi:10.1016/S0140-6736(15)60644-4.
[xliv] Edge, Dan. 2015. "Outbreak." Frontline. http://www.pbs.org/wgbh/pages/frontline/health-science-technology/outbreak/transcript-81/.
[xlv] International Rescue Committee. 2014. Risking Repetition. http://www.rescue.org/sites/default/files/resource-file/IRC_EbolaBrief_20140302.pdf.
[xlvi] World Health Organisation. 2015. "Successful Ebola Responses in Nigeria, Senegal and Mali." Successful Ebola responses in Nigeria, Senegal and Mali.

[xlvii] International Rescue Committee. 2014. Risking Repetition. http://www.rescue.org/sites/default/files/resource-file/IRC_EbolaBrief_20140302.pdf.
[xlviii] World Health Organisation. 2015. "Successful Ebola Responses in Nigeria, Senegal and Mali." Successful Ebola responses in Nigeria, Senegal and Mali.
[xlix] Bloom, Gerald, Hayley MacGregor, Andrew McKenzie, and Emmanuel Sokpo. 2015. Strengthening Health Systems in Resilience. http://opendocs.ids.ac.uk/opendocs/bitstream/handle/123456789/5851/ID559 Online rev.pdf?sequence=1.
[l] Bloom, Gerald, Hayley MacGregor, Andrew McKenzie, and Emmanuel Sokpo. 2015. Strengthening Health Systems in Resilience. http://opendocs.ids.ac.uk/opendocs/bitstream/handle/123456789/5851/ID559 Online rev.pdf?sequence=1.
[li] Bloom, Gerald, Hayley MacGregor, Andrew McKenzie, and Emmanuel Sokpo. 2015. Strengthening Health Systems in Resilience. http://opendocs.ids.ac.uk/opendocs/bitstream/handle/123456789/5851/ID559 Online rev.pdf?sequence=1.
[lii] Heymann, David L, Lincoln Chen, Keizo Takemi, David P Fidler, Jordan W Tappero, Mathew J Thomas, Thomas a Kenyon, et al. 2015. "Global Health Security: The Wider Lessons from the West African Ebola Virus Disease Epidemic." The Lancet 385: 1884–1901. doi:10.1016/S0140-6736(15)60858-3.
[liii] Elbe, Stefan, and Anne Roemer-Mahler. 2015. "Global Governance and the Limits of Health Security." Institute of Development Studies. http://opendocs.ids.ac.uk/opendocs/bitstream/handle/123456789/5850/ID558 Online.pdf?sequence=1.
[liv] Horton, Richard. 2015. "Offline: A Pervasive Failure to Learn the Lessons of Ebola." The Lancet 386 (9998). Elsevier Ltd: 1024. doi:10.1016/S0140-6736(15)00152-X.
[lv] Heymann, David L, Lincoln Chen, Keizo Takemi, David P Fidler, Jordan W Tappero, Mathew J Thomas, Thomas a Kenyon, et al. 2015. "Global Health Security: The Wider Lessons from the West African Ebola Virus Disease Epidemic." The Lancet 385: 1884–1901. doi:10.1016/S0140-6736(15)60858-3.
[lvi] SDG open Working Group. 2015. Sustainable Development Goals Open Working Group Proposal for Open Working Group Proposal for Sustainable Development Goals. http://undocs.org/A/68/970.

What diseases are like Ebola?: A Process for Defining Priority Diseases for a Pandemic R&D Financing Facility

Jessica Flannery, Gabriel Seidman, Yadira Almodovar-Diaz,
Usman Munir, Nurah Alamro and Suerie Moon

INTRODUCTION

The Ebola outbreak that began in late 2013 in West Africa resulted in 28,637 cases and 11,315 deaths as of January 3, 2016, according to the World Health Organization (WHO).[1] Along with direct mortality from Ebola, the outbreak exacerbated food insecurity and severely weakened already strained health infrastructure within heavily affected countries.[2] The World Bank estimates the outbreak cost the three heavily affected countries 2.2 billion dollars in economic growth.[3]

Effective interventions could have reduced morbidity and mortality from the disease, reassured the public, and helped health systems continue to function. When the outbreak began, there were no available approved drugs, vaccines, or rapid diagnostic tests for Ebola. Drugs or vaccines could have protected health workers, at least 418 of whom died caring for patients during the outbreak, and eased their deployment to outbreak-affected areas (if health workers were guaranteed access to such interventions).[4] Rapid point-of-care diagnostic tests could have facilitated triage at overwhelmed Ebola treatment centers, simplified screening of travelers, and helped keep airlines, ships and borders open and operational. While health technologies are no panacea for managing outbreaks and epidemics, the absence of such technologies exacerbated the large-scale regional and global crisis set off by Ebola in 2014.

There are two key reasons why Ebola has not attracted major R&D investment from public or private research funders. First, there was no clear market for health technologies to combat Ebola because the virus had previously affected very few people, in relatively short-lived, sporadic outbreaks, primarily in the poorest countries of the world in central Africa. Prior to the 2014 outbreak, there were fewer than 500 cases reported per year, with no cases reported between 1979 and 1994.[5] For-profit pharmaceutical companies invest in research for products that are profitable.[6] Between 2000 and 2011, only 4% of new therapeutic products and 1% of new chemical entities (NCE's) were registered for diseases affecting the world's poorest populations.[7] Ebola offered no prospects of a profitable market and entailed high risks.

Second, there was little incentive for public or philanthropic research funders to invest in Ebola. Other diseases, such as tuberculosis or malaria, affected far greater numbers of people. The sporadic nature of Ebola made it difficult to conduct clinical trials and caused the disease to slip from the public eye.[8]

The absence of available interventions at the beginning of and during the outbreak has spurred proposals for solutions. In particular, there is growing momentum behind calls for a research and development (R&D) financing facility supported by public and philanthropic funds for technologies to address outbreak-prone diseases, including but not limited to Ebola. An important unanswered question is: what

other pathogens merit investment by such a financing facility? This article offers a method for thinking systematically about which diseases should be included in the scope of such a financing facility. It does so by analyzing different conceptual framings of Ebola Virus Disease (EVD), its epidemiological characteristics, and pre-existing lists that draw similarities between EVD and other diseases.

POLICY PROPOSALS AND DEBATE

The Ebola outbreak reinvigorated efforts to create new sources and modes of financing for R&D, most notably the creation of a global R&D financing facility. Prior to the Ebola outbreak, the World Health Organization's (WHO) Consultative Expert Working Group on Research and Development: Financing and Coordination (CEWG), established by the World Health Assembly in 2010, called for the creation of a global R&D fund in its final 2012 report. The CEWG called on WHO Member States to develop a global framework to improve efficiency, coordination, accountability and financing of R&D, with a focus on diseases occurring in developing countries. Within this framework, the CEWG proposed an R&D fund to sustainably finance needs-driven R&D, in which priorities would be based on public health needs rather than market potential. The CEWG proposed that funds be generated through binding Member State commitments to contribute 0.01% of GDP to create push funding and pull-incentives for R&D. Needs driven R&D represents a broad categorization with substantial latitude to narrow which diseases fall within its scope.[9]

There have been multiple calls in the last year from various stakeholders for the development of an R&D mechanism. In February 2015, a report for the UK Government called for an international fund for R&D in antimicrobial resistance in light of limited market incentives for pharmaceutical companies to invest in this research.[10] In May 2015, Balasegaram et al. (2015) called for a global biomedical R&D fund to address the lack of R&D for Ebola and emerging infectious diseases, neglected diseases, and antimicrobial resistance.[11] Plotkin et al. (2015) followed with a July 2015 article outlining a vaccine development seed fund for emerging infectious diseases and improving the efficacy of existing vaccines.[12] The October 2015 Oslo consultation on Financing of R&D Preparedness and Response to Epidemic Emergencies, a step in the development of the WHO's R&D blueprint for epidemics and health emergencies due to be submitted to the 2016 World Health Assembly, included a proposal for a financing facility. The proposal emphasized global coordination of public and private stakeholders to finance R&D for diseases with epidemic or pandemic potential for which the market has failed.[13] In November 2015, the UK government, in partnership with the Bill and Melinda Gates Foundation, committed one billion pounds to the newly launched Ross Fund for the control of and research into diseases with epidemic potential including Ebola and malaria.[14] Also in November of 2015, the joint Harvard, London School of Hygiene and Tropical Medicine (LSHTM) Independent Panel on the Global Response to Ebola proposed a global financing facility "for research and development for health technology relevant for major disease outbreaks" (Moon et al., 2015) as one of ten recommendations for improved prevention and response to disease outbreaks.[15]

Key considerations regarding such a financing facility include the types of technologies it should cover, and as implied by the various fund proposals outlined

above, the scope of diseases the fund should include. Which diseases a funding facility should prioritize is not only a technical or financial question. The potential answers have implications for who would contribute, how it might operate, what it might deliver, and ultimately, who will benefit.

Several efforts have recently been made to identify priority diseases for potential investment. As part of WHO's development of an R&D blueprint for epidemics and health emergencies, it released a list of diseases "likely to cause major epidemics" that have no approved treatment or vaccines.[16] In addition, in January 2016, *Science* published a list of ten priority diseases for vaccine development identified through a survey of fifty experts who assessed candidates based on scientific feasibility, morbidity and mortality, and societal or economic impact.[17] In December 2015, the Foundation for Vaccine Research published a provisional list of priority target diseases for a vaccine R&D funding facility.[18] Both the *Science* list and the Foundation for Vaccine Research list focus specifically on vaccines.[19] Diseases prioritized for vaccine development may not be the same diseases prioritized for development of drug or diagnostic technologies, and vice versa, underscoring the need for further analysis. This article offers an additional systematic method for setting disease priorities for a pandemic R&D funding facility, without focusing on one particular type of technology.

POLICY RELEVANCE

The Ebola outbreak highlighted the need for alternate mechanisms to finance and reward R&D for health technologies when the market does not offer appropriate incentives. Market failures in health technology R&D are widely recognized as applicable to anti-microbial resistance, emerging infectious diseases, orphan diseases, and neglected diseases, among others.

In the literature, Ebola is defined as both an emerging infectious disease (EID) and a neglected tropical disease (NTD).[20] As Jackson & Stephenson (2014) describe, EIDs and NTDs are socio-political constructs: EIDs are constructed as national security threats and consequently, drug development for these diseases is framed as an investment in protecting national security.[21] In contrast, NTDs are framed as diseases of poverty and, quite literally, neglected populations. Financing for research into NTDs has primarily come from donor countries' development aid budgets and philanthropic organizations such as the Gates Foundation or Wellcome Trust.[22]

In fact, Ebola has characteristics of both EIDs and NTDs: it invokes fear and may have the potential to be wielded as a biological weapon. At the same time, prior to the West Africa outbreak, Ebola was isolated within remote populations in low-income countries, primarily fragile states. These dynamics also played out during the Ebola outbreak: the three heavily impacted countries were low-income, with relatively recent conflicts. The sheer volume of cases and high mortality rates, along with spillover to neighboring and high-income countries starkly illustrated the risk Ebola presented.

Although Ebola has been framed as an NTD, it is not actually included in the World Health Organization's (WHO) list of NTDs. Mackey and Liang's (2012) list of emerging and re-emerging infectious neglected tropical diseases (EReNTDs), which is based on inclusion in both the WHO's NTD list and US Center for Disease Control and Prevention's (CDC) list of Emerging and Reemerging Infectious Diseases, does not include Ebola, presumably because the disease is not categorized as an NTD by the the

WHO.[23] Ebola is included in three high-profile EID-oriented lists: the WHO's Pandemic and Epidemic Disease list, the CDC list of Emerging and Reemerging Infectious Diseases, and the US National Institute for Allergy and Infectious Diseases' (NIAID) Category A list of priority pathogens for biodefense research.[24] All three lists are framed in terms of health security or defense. Arguably, within the EID-oriented lists, the WHO's Pandemic and Epidemic Disease list and the CDC's list are slightly more oriented towards public health and pandemic potential while the NIAID list of Category A diseases is defined as pathogens with potential for bioterrorism, and is more oriented towards biodefense.[25]

The way in which Ebola is conceptualized and categorized is not merely a semantic question. It has implications for which solutions are advanced to address the above-mentioned R&D gaps, as well as who is likely to support these solutions, contribute financing, and have a claim on the resulting technologies. The NTD framing lends itself to voluntary contributions by actors traditionally associated with development assistance including philanthropic foundations (such as the Gates Foundation and Wellcome Trust) and development agencies of national governments (such as the United States Agency for International Development (USAID), the Norwegian Agency for Development Cooperation (NORAD), and the United Kingdom Department for International Development (DFID)).[26] This framing also lends itself to voluntary financing mechanisms as well as provision of technologies at or near cost to ensure access for low-income populations.[27] The pharmaceutical industry may be involved in NTD research projects as an act of corporate social responsibility and/or with financing from philanthropic or development aid sources.

In contrast, the EID framing, focused on security and pandemics presenting a global threat, may attract scientific and security oriented institutions, such as the CDC, the United States National Institutes of Health (US NIH), and the US Defense Advance Projects Research Agency (DARPA).[28] The EID framing leads away from philanthropy towards public financing, as defense and national security are broadly understood to require public monies.[29] In fact, prior to the 2014 Ebola outbreak, most funding for Ebola technology research was from defense-oriented agencies and oriented towards vaccines.[30] Access to technologies developed to counteract bioterrorism may be tightly controlled by countries who develop these for their security interests. Therefore, the EID framing also raises critical but politically-sensitive questions regarding which countries and populations will have priority access to drugs or vaccines in the event of an outbreak.[31]

AN APPROACH TO THINKING SYSTEMATICALLY ABOUT DISEASES IN SCOPE

If a new global R&D financing facility is created in the wake of Ebola, which diseases should be targeted in the short to medium term? The characteristics of the West Africa Ebola outbreak shaped our analysis of which pathogens ought to be considered potential priorities: the outbreak moved relatively quickly, impacted a large number of people, had high mortality rates, and devastated countries and communities with weak health systems and infrastructure. In other words, we sought to identify diseases with the potential to create similar large-scale loss of life and social havoc, for which no effective drugs or vaccines exist.

To determine this set of diseases we used a two-step process. First, we developed a series of criteria based on Ebola's biology and epidemiology. Second, we analyzed existing disease lists against these criteria. Using existing lists is advantageous both because the lists represent previously narrowed groupings of disease and because these categories are currently in use. As a result, these lists have both practical utility and, as outlined above, conceptual associations. However, these existing lists are still fairly broad and inclusive of diseases with many different features. Applying a set of criteria to these lists helps to develop a much more narrow list of diseases with similar features. One limitation of this approach is that there may be important diseases that are not on any pre-existing list, which this process would not consider. The process outlined here could be applied using different criteria, resulting in a different list. The proceeding sections outline, in detail, a process to determine a narrower, priority set of diseases.

CRITERIA BASED ON EBOLA'S BIOLOGY AND EPIDEMIOLOGY

Ebola virus is a low-incidence, high-consequence pathogen.[32] It is highly pathogenic, and is historically associated with devastating episodic outbreaks. Case fatality rates range from 25% to 90%.[33] The virus is transmitted through human-to-human contact or contact with infected bodily fluids on other materials. Ebola is a zoonotic disease that can be passed to humans from monkeys, bats, or bush meat.[34]

Based on this biology and epidemiology, we developed the following pre-condition and three criteria for potential inclusion in a priority list:

Precondition: no current approved, clinically effective treatments or vaccines: We considered diseases as candidates for inclusion if they had no clinically effective treatment or treatment was limited to "supportive therapy." (With regards to Ebola, the CDC defines "supportive therapy" as available treatments for symptoms, but no clinically effective approved treatments for the disease.[35]) When determining if a disease has a clinically effective treatment, we did not require that the treatment cure the disease. For example, there is no cure for human immunodeficiency virus (HIV), but anti-retroviral drugs can effectively control the virus.[36] As a result, HIV does not meet the pre-condition for inclusion in our priority list.

1. ***High fatality rates***:_Diseases included have fatality rates at or above approximately 10%. This threshold could be moved up or down to generate shorter or longer priority lists, respectively.
2. ***Easily Transmissible (e.g. airborne or human-to-human transmission)***: In the absence of appropriate safety measures, transmission of these diseases can occur in a short period of time through casual, person-to-person or airborne contact.
3. ***Market incentives likely inappropriate***: The market failure condition includes diseases that meet one of two conditions: being limited to low-income populations or occurring primarily in episodic outbreaks. Both of these situations cause market failure and result in diseases prone to lacking effective technologies to treat them.

a. ***Predominantly impacting lower-income populations***: Diseases that occur exclusively in low-income countries or in low-income (often rural) populations within middle- or high-income countries, as outlined in the WHO or CDC page on the disease.
b. ***Occurring Primarily in Episodic Outbreaks***: Diseases that occur only in periodic outbreaks, not through ongoing or generalized transmission, were also considered to have met the market failure condition. Because the location, timing, and scope of an outbreak is difficult to predict, the result is a highly risky market for technologies.[37] Such diseases may also disappear easily from public view, reducing the political pressure to develop interventions to control them.

Diseases that meet the above pre-condition and criteria – absence of effective technologies, high fatality rates, easily transmissible, and market incentives likely inappropriate– are likely to cause serious social and economic disruption, and lead to the type of large-scale global emergency witnessed during the Ebola outbreak. Therefore, they are strong candidates for increased global public R&D investment.

APPLYING THE CRITERIA TO PRE-EXISTING DISEASE LISTS

We applied these criteria to four existing disease lists, outlined in Figure 1. Using the criteria, we examined each disease in the list using the CDC and WHO pages for the disease.

Figure 1: Disease Lists Utilized [38]

WHO Neglected Tropical Diseases Buruli Ulcer, Chagas Disease, Dengue and Chikungunya, Guinea Worm Disease, Echinococcosis, Yaws, Foodborne Trematodiases, Sleeping Sickness, Leischmaniasis, Leprosy, Lymphatic Filariasis, Onchocerciacis, Rabies, Shistosomiasis, Soil-transmitted Helminthiases, Taeniasis/Cysticerosis, Trachoma
CDC Emerging Infectious Diseases Drug-resistant Infections, Mad cow disease, Campylobacteriosis, Chagas disease, Cholera, Cryptococcosis, Cryptosporidiosis, Cyclosporiasis, Cysticercosis, Dengue Fever, Diphtheria, Ebola, E-Coli, Group B Strep, Hanta Virus, Hepatitis C, Hendra Virus, Histoplasmosis, HIV/ AIDS, Influenza, Lassa Fever, Legionnairs' Disease, Leptospirosis, Listeriosis, Lyme Disease, Malaria, Marburg, Measles, Meningitis, Monkeypox, Methicillin Resistant Staph, Nipah, Norovirus, Pertussis, Plague, Rabies. Rift Valley Fever, Rotavirus, Salmonellosis, SARS, Shigellosis, Smallpox, Sleeping Sickness, Tuberculosis, Tularemia, Valley Fever, Vancomycin Resistant Staph, West Nile Virus, Yellow Fever
NIAID Category A Pathogens Anthrax, Botulism, Plague, Smallpox (and related Pox), Tularemia, Viral Hemorrhagic Fevers: Arenaviruses (Junin, Machupo, Guanarito, Chapare, Lassa, Lujo), Bunyaviruses (Hantaviruses, Rift Valley Fever, Crimean Congo Hemorrhagic Fever), Flaviruses (Dengue), Filoviruses (Ebola, Marburg)
WHO Pandemic and Epidemic Diseases Avian Influenza, Cholera, Emerging Diseases (Ex: Nodding Diseases), Hendra Virus Infection, Influenza, Leptosirosis, Meningitis, Nipah virus infection, Plague, Rift Valley Fever, SARS and Coronavirus Infections, Smallpox and Human Monkeypox, Tulararemia, Viral Haemorrhagic Fevers (Including Ebola), Yellow Fever

WHO Neglected Tropical Diseases

There are two, not mutually exclusive, ways to look at Neglected Tropical Diseases. One is through the WHO's list of 17 specific diseases, which excludes Ebola.[39] The other is through the conceptual framing of NTDs, described above, as diseases of poverty and market failure, which is how Ebola is associated with NTDs.[40] The WHO list is well-defined, clear and inclusive of diseases for which there is market failure (see Table 1). The effects of the diseases on this list vary: some cause temporary illness, others disability, others death. Similarly, the epidemiology of diseases varies considerably. Many of the diseases in the list are not episodic or outbreak prone. Most of the diseases on this list do not have rapid transmission patterns or high mortality rates. The list's underlying rationale is based on market failure, not on biologic and epidemiologic features. Thus, none of the 17 NTDs fit our criteria.

CDC List of Emerging and Re-emerging Infectious Diseases

This CDC list includes a wide-range of fifty diseases including parasitic, viral, bacterial, and fungal infections as well as prion diseases.[41] Four diseases in this list (Nipah, SARS, Ebola, and Marburg, see Table 1) meet our criteria, and all four are also on the WHO list of Epidemic and Pandemic Diseases.

US National Institutes for Allergy and Infectious Disease Category A Diseases

The US NIAID's list of category A diseases has formal inclusion criteria and is relatively condensed, consisting of seventeen diseases, twelve of which are viral hemorrhagic fevers.[42] Three diseases in this list (Ebola, Marburg, and Machupo) meet our criteria.

WHO List of Epidemic and Pandemic Diseases

Like both the NIAID's and CDC's list, the WHO's list of epidemic and pandemic diseases includes diseases with a wide range of transmission patterns. The list includes 13 diseases and three groups of diseases, including viral hemorrhagic fevers and coronaviruses. Six diseases in the WHO's list meet our criteria (and also comprised all of the diseases on our final list) (see Table 1).[43]

REVIEWING THE LISTS TO DETERMINE THE DISEASES

Six diseases meet our criteria: Ebola Virus Disease, Machupo virus, Middle East Respiratory Syndrome (MERS), Marburg Hemorrhagic Fever, Ebola, Nipah Virus, and Severe Acute Respiratory Syndrome (SARS) (see Table 1). The following outlines how these criteria were applied (except for Ebola, which is handled earlier in the paper). It is important to note that anti-microbial resistance was not included in this analysis as this is a problem rather than a specific disease.

Machupo virus

Machupo virus, also known as Bolivian Hemorrhagic Fever (BHF), is in the Arenavirus group of viral Hemorrhagic Fever indigenous only to Bolivia. The disease first appeared in 1959 and manifested in a series of rural outbreaks through the 1960s.[44] The most recent reported outbreak was in 2008, when two hundred people were infected.[4546]

- Precondition: There is no vaccine and the only available treatment is supportive.

1. High fatality rates: The case fatality rate is about 30%, (142/470) based on outbreaks up to 1971, although fatality rates for the more recent outbreaks are lower, at around 6% (12/200).[47]
2. Easily Transmissible: The disease is spread through person-to-person contact as well as through contact with rodent droppings.[48]
3. Market incentives likely inappropriate: The disease meets both of the market failure criteria: it occurs primarily in episodic outbreaks and impacts rural, lower-income populations.

Middle East Respiratory Syndrome (MERS)

MERS is a coronavirus first reported in Saudi Arabia in 2012. The disease has since spread to several other countries, including the United States. Most MERS patients develop severe acute respiratory illness with symptoms of fever, cough and shortness of breath. There have been 1626 laboratory confirmed cases reported to the WHO. The largest known outbreak of MERS outside the Arabian Peninsula occurred in the Republic of Korea in 2015.[49]

- Precondition: There are neither vaccines nor approved treatments recommended for MERS-Cov infection.[50]

1. High fatality rates: The disease has a 30-40 % fatality rate.[51]
2. Easily Transmissible: The exact transmission method of MERS-Cov is unknown, but it is likely spread through person-to-person contact via an infected person's respiratory secretions, such as through coughing. The CDC recommends standard transmission prevention procedures employed for airborne disease.
3. Market incentives likely inappropriate: The disease meets one of the two market failure criteria, as it occurs primarily in episodic outbreaks.

Marburg Hemorrhagic Fever

Marburg hemorrhagic fever (Marburg HF) is a rare but severe hemorrhagic fever that affects both humans and non-human primates. The reservoir host of Marburg virus is the African fruit bat, although the illness is asymptomatic in bats. The largest outbreak was in 252 people with a 90% fatality rate (Angola, 2004-2005).[52]

- Precondition: There is no approved treatment or vaccine for the disease.

1. High fatality rates: The case-fatality rate for Marburg hemorrhagic fever is between 23-90%.[53]
2. Easily Transmissible: Although it is unknown how Marburg moves from the host to humans, once in humans it spreads through person-to-person

contact.[54]

3. Market incentives likely inappropriate: The disease meets both market incentive criteria. It occurs primarily in episodic outbreaks and primarily impacts rural, low-income populations, although it was initially identified after an outbreak among scientists.[55]

Nipah Virus

Nipah virus causes encephalitis and is associated with symptoms such as headache, confusion, coma, respiratory illness, and occasionally pulmonary symptoms. Outbreaks have been reported in South and Southeast Asia, with outbreaks occurring almost every year in Bangladesh. The largest outbreak was among three hundred people in Southeast Asia.[56] There have been several outbreaks of between 200 and 300 people in South Asia.[57]

- Precondition: There are no approved treatments for Nipah virus, and although one drug (ribavirin) has shown effectiveness against the virus in vitro, data on its clinical effectiveness are limited and inconclusive.

1. High fatality rates: During the initial outbreak in Malaysia and Singapore when researchers identified Nipah, 100 of the 300 reported infections led to fatalities, a case fatality rate of over 30%.[58] In South Asia, the average case fatality rate is 74.5%.[59]
2. Easily Transmissible: Transmission occurs from close contact with infected bats, pigs, or humans, with families and caregivers of infected patients being the main source of human-to-human transmission. Transmission through person-to-person contact has been reported only in India and Bangladesh.[60]
3. Market incentives likely inappropriate: The disease is outbreak based, but does not exclusively impact low-income populations, meeting one of the two market incentive criteria.[61]

Severe acute respiratory syndrome (SARS)

SARS is caused by a coronavirus and was identified in 2003 during an outbreak that spread from Asia to more than 20 countries across North America, South America, and Europe.[62] Within approximately eight months, the virus infected over 8,000 people.[63]

- Precondition: There is no approved treatment or vaccine for the disease.

1. High fatality rates: According to the CDC, the case fatality fate for SARS is 9.6%. According to the WHO, it is 10-15%.[64]
2. Easily Transmissible: The virus causing SARS is spread through person–to-person contact via respiratory droplets produced during coughing or sneezing, so anyone who comes into close physical proximity of an infected person can acquire the disease.[65]
3. Market incentives likely inappropriate: The disease occurs primarily in episodic outbreaks and meets one of the two market failure criteria.[66]

Borderline cases

In applying our criteria to the diseases, some diseases fell at the border of a criterion. These cases presented questions of how to accurately apply the criterion and whether the disease should be prioritized differently once the criterion was applied. Crimean Congo Hemorrhagic Fever (CCHF), for example, did not meet the precondition of an absence of an approved, clinically effective treatment, based on the following from the WHO: "The antiviral drug ribavirin has been used to treat CCHF infection with apparent benefit. Both oral and intravenous formulations seem to be effective." According to the CDC, the drug is effective for in vitro for CCHF and in patients "reportedly with some benefit."[67] CCHF appears to have a clinically effective treatment, but exactly how effective is not clear. Similarly, Machupo was included within the final list based on current understanding that person-to-person transmission is likely, although the disease's exact transmission mechanisms are unknown.[68] In these borderline cases, multiple sources were consulted. Additional criteria could help to assess these cases. Alternatively, diseases at the border of a criterion could be considered second tier priorities.

NEWLY IDENTIFIED DISEASES WHICH MEET CRITERIA

An important feature of the lists reviewed here, particularly the emerging infectious disease lists, is that they are adjusted to encompass newly recognized diseases. Similarly, we recognize that newly emerging diseases -- or diseases that re-emerge with previously unknown features, such as Zika – may meet the outlined criteria and may be important to include within future priority lists.

CONCLUSIONS

Based on review of the four disease lists from WHO, CDC AND US NIAD, we produced a list of six priority diseases (see Table 1). We sought to illustrate in this article an objective, rational approach to identifying priority diseases for a potential global R&D financing facility intended to address the types of market and policy failures exemplified by Ebola. This is a process based on both the biologic and epidemiologic characteristics of the disease as well as on existing disease categories with which Ebola has been associated.

The biologic and epidemiologic criteria ultimately act as a prioritization framework to focus funds on a relatively small set of diseases. If a new global R&D financing facility is created, it would likely begin as a pilot initiative tightly-focused on a relatively small number of target pathogens.[69] The list developed here has significant overlap with, but is not identical to, the priority list recently published by the WHO for the development of its R&D blueprint.[70] This analysis has shown that developing such a priority list can be done by identifying several key criteria and building on pre-existing lists. While a real-world process for identifying funding priorities may ultimately adopt different criteria, resulting in a different list, we have shown in this analysis the implications of using a certain set of criteria based on the Ebola experience.

The end result of applying these criteria is a list that, like Ebola, incorporates aspects of both the EID and NTD framings. This serves as an example of how a set of

criteria, when applied to existing lists, may encompass different framings. The Oslo high-level consultation on Financing of R&D Preparedness and Response (2015) underscored the need for improved approaches to R&D to address diseases framed as either NTDs or EIDs, and to draw on a broad range of stakeholders:

> *It is imperative for all countries to contribute, whether high-, middle- or low-income to both protecting their own populations as well as populations in other countries. There is a need to pay particular attention to the needs of vulnerable populations since they are prone to higher risks and have less means to prepare and respond to crises. The challenge is a health security, a public health and a development issue. It must be met by a holistic governmental response by relevant ministries, including foreign affairs, security, science & technology, health and development, and build on the involvement of both public agencies and institutions, private sector and civil society.* [71]

A priority-setting process such as that described here, using set criteria and existing disease lists, could attract diverse R&D stakeholders by encompassing different interests.

This method has several limitations. One is that there may be relevant diseases that are not included in any of the lists we identified. Another is that the modes of transmission of newly emerging diseases may not be fully understood, rendering the "easily transmissible" criteria less useful. Further, we did not take into account the scientific feasibility of developing vaccines, drugs or diagnostics for each disease; mobilizing such knowledge would surely strengthen this analysis.

We have illustrated an approach to tightly defining a set of priority diseases. While we identified one set of diseases, a different set of diseases could result from different criteria, different weights to individual criteria, or different lists. This list used Ebola's epidemiology and biology as a starting place for developing the list, an alternative approach may use the characteristics of another disease, such as Zika, to form very different criteria using the same process. Alternately, it may be advantageous to define a priority list of diseases more broadly, as this may attract different funders, or funders with multiple interests.

Ultimately, it is critical to mobilize new and appropriately structured public financing for R&D to counteract future potential pandemics. The approach to disease prioritization described here offers a way for a future global R&D financing facility to start with a tightly focused mission and perhaps a greater likelihood of success.

Table 1: Diseases Reviewed which Meet Pre-Condition of No Vaccine or Treatment, Including Final List of Priority Diseases (information sourced from CDC and WHO websites)

Diseases in Final List	Disease	1. High Fatality Rates (if untreated)	2. Easily Transmissible (Airborne; human-to-human contact)	3. Impacted by Market Failure		List			
				Episodic, Outbreak-based transmission	Isolated to low-income populations	WHO PED	CDC EID	NIAID Cat. A	WHO NTD
	Mad Cow Disease [72]	Yes	No	Yes	No		x		
	Hantavirus [73]	Yes	No	Yes	Yes	x	x	x	
	Norovirus [74]	No	Yes	Yes	No		x		
	West Nile Virus [75]	No	No	Yes	No		x		
	Guinea Worm [76]	No	No	Yes	Yes				x
	Hendra Virus [77]	Yes	No	Yes	No	x	x		
	Dengue [78]	No	No	Yes	No	x	x	x	x
	Chikungunya [79]	No	No	Yes	No	x	x		x
	Lassa Fever [80]	Yes	Yes	No	Yes	x	x	x	
	Guanarito [81]	Yes	No	Yes	Yes	x		x	
	Chapare [82]	Yes	Unknown	Yes	Yes	x		x	
	Lujo [83]	Yes	Yes	Yes	Yes	x		x	
Diseases on Final List									
1	Nipah Virus [84]	Yes	Yes	Yes	No	x	x		
2	SARS (Severe Acute Respiratory Syndrome) [85]	Yes	Yes	Yes	No	x	x		
3	MERS (Middle East Respiratory Syndrome) [86]	Yes	Yes	Yes	No	x			
4	Ebola [87]	Yes	Yes	Yes	Yes	x	x	x	
5	Machupo [88]	yes	Yes	Yes	Yes	x		x	
6	Marburg [89]	Yes	Yes	Yes	Yes (along with lab-based outbreaks)	x	x	x	
7	Newly Identified Diseases which meet criteria								

***Jessica Flannery**, **Gabriel Seidman**, **Yadira Almodovar Diaz**, **Usman Munir**, and **Nurah Alamro** are Doctor of Public Health Students at Harvard T.H. Chan School of Public Health.*

***Suerie Moon** is Research Director and Co-Chair of the Forum on Global Governance for Health at the Harvard Global Health Institute, lecturer on Global Health at Harvard T.H. Chan School of Public Health, and Co-Director of the Project on Innovation and Access to Technologies for Sustainable Development at the Harvard Kennedy School of Government's Mossavar- Rahmani Center for Business and Government.*

---

[1] World Health Organization, "WHO Ebola Situation Report," *WHO*, January 3, 2016, http://apps.who.int/ebola/ebola-situation-reports.
[2] The Economist, "Ebola: Unintended Consequences," *The Economist*, 2014; M Edelstein and P Angelides, "Ebola: The Challenging Road to Recovery," *Chatham House*, 2015.
[3] World Bank, "World Bank Group Ebola Response Fact Sheet," *World Bank Group Ebola Response Fact Sheet*, May 18, 2015, http://www.worldbank.org/en/topic/health/brief/world-bank-group-ebola-fact-sheet.
[4] World Health Organization, "Health Worker Ebola Infections in Guinea, Liberia and Sierra Leone: A Preliminary Report 21 May 2015," 2015, http://apps.who.int/iris/handle/10665/171823.
[5] S. Arie, "Ebola: An Opportunity for a Clinical Trial?," *BMJ (Clinical Research Ed.)* 349 (August 6, 2014): g4997.
[6] Ruth Macklin and Ethan Cowan, "Conducting Research in Disease Outbreaks," *PLoS Neglected Tropical Diseases* 3, no. 4 (2009): e335; World Health Organization, "Health Worker Ebola Infections in Guinea, Liberia and Sierra Leone."
[7] Belen Pedrique et al., "The Drug and Vaccine Landscape for Neglected Diseases (2000–11): A Systematic Assessment," *The Lancet Global Health* 1, no. 6 (2013): e371–79.
[8] Macklin and Cowan, "Conducting Research in Disease Outbreaks"; Arie, "Ebola: An Opportunity for a Clinical Trial?"
[9] Consultative Expert Working Group on Research and Development: Financing and Coordination, "Research and Development to Meet Health Needs in Developing Countries: Strengthening Global Financing and Coordination" (Geneva: WHO, 2012), http://www.who.int/phi/CEWG_Report_5_April_2012.pdf
[10] Jim O'Neil, "Tackling a Global Health Crisis: Initial Steps, The Review on Antimicrobial Resistance," February 2015, https://amr-review.org/sites/default/files/Report-52.15.pdf.
[11] Manica Balasegaram et al., "A Global Biomedical R&D Fund and Mechanism for Innovations of Public Health Importance" (PLOS Medicine, May 2015).
[12] Stanley A. Plotkin, Adel AF Mahmoud, and Jeremy Farrar, "Establishing a Global Vaccine-Development Fund," *New England Journal of Medicine* 373, no. 4 (2015): 297–300.
[13] "Oslo Consultation on Financing of R&D Preparedness and Response to Epidemic Emergencies" (Norwegian Institute of Public Health, October 29, 2015).
[14] HM Treasury and DFID, *Chancellor George Osborne and Bill Gates to Join Forces to End Malaria*, November 22, 2015, https://www.gov.uk/government/news/chancellor-george-osborne-and-bill-gates-to-join-forces-to-end-malaria.
[15] Suerie Moon et al., "Will Ebola Change the Game? Ten Essential Reforms before the next Pandemic. The Report of the Harvard-LSHTM Independent Panel on the Global Response to Ebola," *The Lancet* 386, no. 10009 (November 2015): 2204–21, doi:10.1016/S0140-6736(15)00946-0.
[16] WHO, "WHO Publishes List of Top Emerging Diseases Likely to Cause Major Epidemics," *Essential Medicines and Health Products*, 2016, http://www.who.int/medicines/ebola-treatment/WHO-list-of-top-emerging-diseases/en/.
[17] Jon Cohen, "Unfilled Vials," *Science* 351, no. 6268 (January 1, 2016): 16–19.

[18] Vaccine Foundation, "Priority Targets Provisionally Identified for Proposed Fund," *Vaccine Foundation*, December 9, 2015, http://www.vaccinefoundation.org.
[19] Ibid.; Cohen, "Unfilled Vials."
[20] US Centers for Disease Control, "CDC Emerging and Re-Emerging Diseases.," *US Centers for Disease Control*, n.d.; Ripudaman Bains, "A Ticking Time Bomb? Ebola and the Neglected Tropical Diseases," November 27, 2014, http://blogs.biomedcentral.com/on-biology/2014/11/27/a-ticking-time-bomb-ebola-and-the-neglected-tropical-diseases/.
[21] Y. Jackson and N. Stephenson, *Neglected Tropical Disease and Emerging Infectious Disease: An Analysis of the History, Promise and Constraints of Two Worldviews.*, vol. 2015, 2/17/2015, 2014.
[22] Ibid.
[23] Tim K. Mackey and Bryan A. Liang, "Threats from Emerging and Re-Emerging Neglected Tropical Diseases (NTDs)," *Infection Ecology & Epidemiology* 2, no. 0 (August 1, 2012), doi:10.3402/iee.v2i0.18667.
[24] US National Institutes for Allergy and Infectius Disease, "NIAID Category A Diseases," *US National Institutes for Allergy and Infectius Disease*, n.d.; World Health Organization, "WHO Pandemic and Epidemic Diseases.," *World Health Organization*, 2015, http://www.who.int/csr/disease/en/; US Centers for Disease Control, "CDC Emerging and Re-Emerging Diseases."
[25] US National Institutes for Allergy and Infectius Disease, "NIAID Category A Diseases."
[26] Andrew Lakoff, "Two Regimes of Global Health," *Humanity: An International Journal of Human Rights, Humanitarianism, and Development* 1, no. 1 (2010): 59–79, doi:10.1353/hum.2010.0001; Jackson and Stephenson, *Neglected Tropical Disease and Emerging Infectious Disease: An Analysis of the History, Promise and Constraints of Two Worldviews.*
[27] Institute for Health Metrics and Evaluation (IHME), "Financing Global Health 2014: Shifts in Funding as the MDG Era Closes" (Seattle, WA: IHME, n.d.).
[28] Nicholas B. King, "Security, Disease, Commerce Ideologies of Postcolonial Global Health," *Social Studies of Science* 32, no. 5–6 (2002): 763–89.
[29] Andrew Lakoff, "Two Regimes of Global Health."
[30] Crystal Boddie, "Federal Funding in Support of Ebola Medical Countermeasures R&D," *Health Security* 13, no. 1 (2015): 3–8; S. Strauss, "Ebola Research Fueled by Bioterrorism Threat," *Canadian Medical Association Journal* 186, no. 16 (November 4, 2014): 1206–1206, doi:10.1503/cmaj.109-4910.
[31] Owain D. Williams, "Access to Medicines, Market Failure and Market Intervention: A Tale of Two Regimes," *Global Public Health* 7, no. sup2 (December 2012): S127–43, doi:10.1080/17441692.2012.725753.
[32] Merill Singer and Scott Clair, "Syndemics and Public Health: Reconceptualizing Disease in Bio-social Context," *Medical Anthropology Quarterly* 17, no. 4 (2003): 423–41.
[33] R. A. Stein, "What Is Ebola?," *International Journal of Clinical Practice* 69, no. 1 (January 2015): 49–58.
[34] CDC, "About Ebola Hemorrhagic Fever| Ebola Hemorrhagic Fever," 2015, http://www.cdc.gov/vhf/ebola/.
[35] Ibid.
[36] CDC, "HIV/AIDS: Treatment," 2015, http://www.cdc.gov/hiv/basics/livingwithhiv/treatment.html.
[37] Rolf Hilgenfeld and Malik Peiris, "From SARS to MERS: 10 Years of Research on Highly Pathogenic Human Coronaviruses," *Antiviral Research* 100, no. 1 (October 2013): 286–95, doi:10.1016/j.antiviral.2013.08.015; Plotkin, Mahmoud, and Farrar, "Establishing a Global Vaccine-Development Fund"; Arie, "Ebola: An Opportunity for a Clinical Trial?"; Macklin and Cowan, "Conducting Research in Disease Outbreaks."
[38] World Health Organization, "WHO Pandemic and Epidemic Diseases."; US Centers for Disease Control, "CDC Emerging and Re-Emerging Diseases."; World Health Organization, "WHO Neglected Tropical Diseases," *World Health Organization*, n.d.; US National Institutes for Allergy and Infectius Disease, "NIAID Category A Diseases."
[39] World Health Organization, "WHO Neglected Tropical Diseases."
[40] Jackson and Stephenson, *Neglected Tropical Disease and Emerging Infectious Disease: An Analysis of the History, Promise and Constraints of Two Worldviews.*
[41] US Centers for Disease Control, "CDC Emerging and Re-Emerging Diseases."
[42] US National Institutes for Allergy and Infectious Disease, "NIAID Category A Diseases."
[43] World Health Organization, "WHO Pandemic and Epidemic Diseases."

[44] "International Notes Bolivian Hemorrhagic Fever -- El Beni Department, Bolivia, 1994," n.d.
[45] Patricia Aguilar et al., "Reemergence of Bolivian Hemorrhagic Fever, 2007–2008," *Emerging Infectious Diseases* 15, no. 9 (September 2009): 1525–26, doi:10.3201/eid1509.081336.
[46] Ibid.
[47] "International Notes Bolivian Hemorrhagic Fever -- El Beni Department, Bolivia, 1994"; Aguilar et al., "Reemergence of Bolivian Hemorrhagic Fever, 2007–2008."
[48] CDC, "What Are the Arenaviridae?," 2015, http://www.cdc.gov/ncidod/dvrd/spb/mnpages/dispages/Fact_Sheets/Arenavirus_Fact_Sheet.pdf.
[49] WHO, "Middle East Respiratory Syndrome Coronavirus (MERS-CoV)," 2015, http://www.who.int/emergencies/mers-cov/en/.
[50] CDC, "Middle East Respiratory Syndrome (MERS)," *CDC*, 2015, http://www.cdc.gov/coronavirus/mers/about/index.html.
[51] Ibid.
[52] CDC, "Marburg Hemorrhagic Fever (Marburg HF)," 2015, http://www.cdc.gov/vhf/marburg/.
[53] Ibid.
[54] Ibid.
[55] Ibid.
[56] CDC, "Nipah Virus (NiV)," 2015, http://www.cdc.gov/vhf/nipah/.
[57] WHO, "Nipah Virus Outbreaks in the WHO South-East Asia Region," 2015, http://www.searo.who.int/entity/emerging_diseases/links/nipah_virus_outbreaks_sear/en/.
[58] CDC, "Nipah Virus (NiV)."
[59] WHO, "Nipah Virus Outbreaks in the WHO South-East Asia Region."
[60] CDC, "Nipah Virus (NiV)."
[61] WHO, "Nipah Virus Outbreaks in the WHO South-East Asia Region"; CDC, "Nipah Virus (NiV)."
[62] CDC, "Severe Acute Respiratory Syndrome (SARS)," 2015, http://www.cdc.gov/sars/.
[63] Ibid.
[64] Ibid.; WHO, "Consensus Document on the Epidemiology of Severe Acute Respiratory Syndrome (SARS)," November 2003, http://www.who.int/csr/sars/en/WHOconsensus.pdf?ua=1.
[65] CDC, "Severe Acute Respiratory Syndrome (SARS)."
[66] Ibid.
[67] CDC, "Crimean-Congo Hemorrhagic Fever (CCHF)," 2016, http://www.cdc.gov/vhf/crimean-congo/index.html.
[68] CDC, "Arenaviridae," *Viral Hemorrhagic Fevers (VHFs)*, 2015, http://www.cdc.gov/vhf/virus-families/arenaviridae.html; Aguilar et al., "Reemergence of Bolivian Hemorrhagic Fever, 2007–2008"; "International Notes Bolivian Hemorrhagic Fever -- El Beni Department, Bolivia, 1994."
[69] "Oslo Consultation on Financing of R&D Preparedness and Response to Epidemic Emergencies."
[70] WHO, "WHO Publishes List of Top Emerging Diseases Likely to Cause Major Epidemics."
[71] "Oslo Consultation on Financing of R&D Preparedness and Response to Epidemic Emergencies."
[72] CDC, "Bovine Spongiform Encephalopathy (BSE), or Mad Cow Disease," 2015, http://www.cdc.gov/prions/bse/.
[73] CDC, "Hantavirus," 2015, http://www.cdc.gov/hantavirus/.
[74] CDC, "Norovirus," 2015, http://www.cdc.gov/norovirus/.
[75] CDC, "West Nile Virus," 2015, http://www.cdc.gov/westnile/.
[76] CDC, "Hendra Virus Disease (HeV)," 2015, http://www.cdc.gov/vhf/hendra/.
[77] US Centers for Disease Control, "CDC Emerging and Re-Emerging Diseases."
[78] WHO, "Dengue," *Health Topics*, 2015, http://www.who.int/topics/dengue/en/.
[79] WHO, "Chikungunya," *Media Centre*, May 2015, http://www.who.int/mediacentre/factsheets/fs327/en/.
[80] CDC, "Lassa Fever," 2015, http://www.cdc.gov/vhf/lassa/.
[81] Rosalba Salas et al., "Venezualan Haemorrhagic Fever," *The Lancet* 338 (October 26, 1991): 1033–36; CDC, "Arenaviridae."
[82] CDC, "Chapare Hemorrhagic Fever (CHHF)," 2015, http://www.cdc.gov/vhf/chapare/.
[83] CDC, "Lujo Hemorrhagic Fever (LUHF)," 2015, http://www.cdc.gov/vhf/lujo/.
[84] CDC, "Nipah Virus (NiV)"; WHO, "Nipah Virus Outbreaks in the WHO South-East Asia Region."
[85] CDC, "Severe Acute Respiratory Syndrome (SARS)"; WHO, "Consensus Document on the Epidemiology of Severe Acute Respiratory Syndrome (SARS)."

[86] CDC, "Middle East Respiratory Syndrome (MERS)"; WHO, "Middle East Respiratory Syndrome Coronavirus (MERS-CoV)."
[87] CDC, "About Ebola Hemorrhagic Fever| Ebola Hemorrhagic Fever"; World Health Organization, "WHO Ebola Situation Report."
[88] Aguilar et al., "Reemergence of Bolivian Hemorrhagic Fever, 2007–2008"; "International Notes Bolivian Hemorrhagic Fever -- El Beni Department, Bolivia, 1994"; CDC, "Arenaviridae."
[89] CDC, "Marburg Hemorrhagic Fever (Marburg HF)."

The Ebola Crisis and Health Systems Development

Alexandra Kaasch

The Ebola outbreak has led numerous global policy actors to call for strengthening health systems. This article discusses these developments employing a global social policy approach. The article shows the contributions by major global social policy actors to tackle the Ebola disease and discusses these in the context of insights of, and strategies to, strengthening health systems in a development context. The article concludes that the Ebola crisis showed some of the consequences of weak health systems. The emerging 'renewed' global awareness that health systems matter, can draw on substantial global knowledge and ideas about health systems, and should be approached by multi-level policy making. Nevertheless, recent data suggests that the Ebola crisis could not be successfully used for the purpose of real commitments to the strengthening of health systems, or only to a limited extent.

INTRODUCTION

At the time of this article's submission, in December 2015, it looks like the so-called "Ebola Crisis" that started in 2014 is over.[1] The 2014-15 Ebola outbreak was the worst outbreak since the discovery of the disease. More than 11,300 people were killed by the virus and more than 28,000 confirmed, probable, and suspected cases have been reported.[2] The inability of the most affected countries to cope with the situation is, amongst other things, linked to weak health systems. The lesson is obvious, and has been expressed in many political statements. The "Future Charter" of the German government, developed with a view on hosting the G7 in 2015 reflects common knowledge:

> *If we are to prevent epidemics such as the current Ebola crisis, we must focus on the problematic relationship between health care services and social security systems in fragile states, […] We must help the poorest developing countries to expand and strengthen their health care systems so that they too can meet relevant health targets. Our goal is to ensure good health for all.*[3]

The Ebola crisis has re-focused the attention of global policymakers on the key role of health systems in developing contexts. It is a broadly shared view that many lives could have been saved and much global concern about the spread of the Ebola virus could have been prevented if the most affected countries had been able to rely on better health systems, including the provision, financing, stewardship in health systems, and situation of health workers.[4]

The situation after this crisis is even weaker health systems in addition to economic, labor market and other social damages caused by the Ebola outbreak, particularly in the countries that had been affected most, namely Guinea, Liberia and Sierra Leone. This implies, amongst other things, that the countries (and the world) will not be better prepared in case of another Ebola outbreak – or that of another comparable disease –than they were in early 2014.

This article engages with the question: To what extent has the common knowledge about health systems been translated into real support to health systems? The argument is based on more general global discourses on health systems, and global governance constellations. The global discourse on health systems has – first – been strengthened through the Ebola outbreak. Looking at the international emergency response for Ebola-affected countries, it is analyzed to what extent the emergency aid considered health system strengthening. Following this, it is discussed to what extent this "re-focus" is sustainable in the sense of facilitating better support to health systems development.

A GLOBAL SOCIAL POLICY APPROACH TO STUDYING THE EBOLA CRISIS

A global social policy and governance perspective[5] appears particularly useful to understand the meaning of global emergency responses to major infectious disease outbreaks. In contrast to related studies in the field of medicine that are often mainly concentrated on the provision of health services, or health economics that ask questions about the financing of health systems, the particular value of a global social policy and governance perspective is its specific combination of analyzing the meanings, similarities, and differences between ideas and strategies provided by various global social policy actors. On the one hand, the provision, financing, and regulation of health systems are understood as in relation to each other.[6] On the other hand, global social policy approaches contextualize health issues within a broader concept of social protection and thereby broaden our view of the social implications of health emergencies, as well as the meaning of comprehensive and sustainable health systems as part of preventive and protective social systems. This literature also emphasizes the role of international actors of different types in the making of global social policies that respond to various global social problems, including public health problems. Furthermore, a global social policy perspective allows considering multiple levels of policymaking in trying to understand the development of national and transnational health systems.

This article takes its starting point from the literature on global ideas about health systems, which describes several decades of global multi-actor engagement with health systems. Global actor sets in the field of health systems have been most usefully mapped by Koivusalo and Ollila, Lee and Goodman, and Kaasch.[7] There are also contributions about the role of particular global health actors, such as the World Health Organization (WHO),[8] the World Bank (Group),[9] public-private partnerships,[10] and the Global Fund to Fight AIDS, Tuberculosis, and Malaria.[11] Such actors have been instrumental in generating and disseminating knowledge and normative ideas on health systems. The global discourse on health systems has been particularly characterized by a high degree of complexity on the content, a considerable degree of uncertainty regarding best models, and fluctuating global attention to the issue. There is, however, more or less consensus between the major global social policy actors on the broad lines of what is necessary to make functioning health systems.[12] In a nutshell, in functioning health systems, there should be universal care (at least for basic health care, but more often beyond that); health financing should happen in the form of big risk pools; and the financing and provision of health care should either be realized through insurance or taxation models, acknowledging that one size does not fit all countries and contexts. In the field of health care provision, that usually implies a mix of public and private providers, with some differences here between actors on the extent to which private

providers should be given a role. Financing should be public and guided by pre-payment, not out-of-pocket payments.[13]

Despite that common knowledge, particularly for the world's poorest countries, the improvement in strengthening health care systems is often disappointing. As the Ebola-affected countries are some of the lowest income countries worldwide, they are recipients of official development assistance (ODA) and other forms of global support. Improving the health of people is an objective in many aid projects and initiatives. Nevertheless, the poorest countries are frequently not those who benefit most from ODA,[14] and global aid in health tends to be vertical (i.e., focused on particular diseases) and geared to emergency care in situations such as the Ebola outbreak or other forms of health crises. As these programs are extremely targeted in scope or time, they often fail to support the development of more comprehensive and sustainable health systems simultaneously.

THE EBOLA OUTBREAK IN A CONTEXT OF WEAK HEALTH SYSTEMS

When, within a few months in the first half of 2014, a dramatic increase in cases of the Ebola virus occurred in particular regions of West Africa, the outbreak soon became considered to be a global health threat, and WHO Director-General Margaret Chan declared the Ebola outbreak a "public health emergency of international concern" in August 2014.[15] That was more than just a statement, or means of rhetoric. It implied that a particular case of health emergency occurred that qualified as a health risk to other states, and required a coordinated international response.[16] This combination of a shared problem and a coordinated international response calls for global governance mechanisms to respond.

Following this classification of a "public health emergency of international concern," the international community was quick in realizing that not only was the kind of infectious disease a problem, but so too was the inability of some of the countries' health systems to cope with the number of patients. There was awareness of the weakness of the affected countries' health systems, and their inability to respond in order to control the spread of the disease. In the case of Ebola – for which there is no cure – the key task of health systems is to prevent further spread of the virus. In particular, the health systems in the most affected countries (Guinea, Liberia and Sierra Leone) had already been very weak and fragmented before the Ebola outbreak. Appropriate health infrastructure was missing. The Ebola outbreak intensified the problem in multiple ways: hospitals were quickly filled to overflowing and could not accept all potentially infected patients. The means to diagnose the virus were limited, or completely unavailable. Numerous health workers were infected and died from Ebola themselves, which made the care situation even worse. These are only a few of the problems the health systems faced, which led to a lack of information in affected communities, limited means to isolate infected people, and a system overwhelmed with necessary contact tracing. In the first weeks, the situation was made even worse as many development organizations left the most affected countries, only increasing the need for support.[17]

INTERNATIONAL AND GLOBAL ACTORS RESPONSES TO THE EBOLA CRISIS

In the months following the outbreak of Ebola, the international community, in the form of many different actors, made major commitments and raised significant resources to fight the spread of Ebola. They did this successfully; now, in December 2015, there seem to be no new cases of infection. According to data collected by the

Financial Tracking Service,[18] by early November 2015, national governments, international organizations, regional organizations and private organizations had committed a total of over US $3.6 billion to fight Ebola.

Donor governments

The most important group of actors in terms of emergency aid was national (donor) governments. They committed money and in-kind aid in various ways, both individually and collectively. A "public health emergency of international concern" calls upon the reaction of the world's major economies in at least two ways. On the one hand, these countries provide development aid to developing countries on a permanent basis, and are connected by multiple trade, financial and other links. It goes beyond the scope of this article, though, to critically following up all of these links and dependencies. On the other hand, infectious diseases may spread quickly around the globe given extensive movement of people between countries. Accordingly, many developed countries reacted with emergency aid packages and developed strategies and committed aid at international gatherings, such as G7/8 or G20 summits. It is the latter issue that this article focuses on.

As an immediate reaction demonstrating the global awareness of the extent and threat of the Ebola outbreak, in summer 2014, the G7 issued a joint declaration. Here, the G7 foreign ministers said: "We urge the international community to bring high-quality medical care to Ebola patients…We underscore our willingness to provide relief to the countries ravaged by the virus and emphasize our common understanding that Ebola is a common global threat to peace and security."[19] When numbers of reported cases had already gone down considerably, the G7 agenda still included the issue of Ebola and health systems at their Schloss Elmau Summit in June 2015 in Germany. The website of the German Federal Ministry for Economic Cooperation and Development states that there is a focus "to draw lessons from the fight against Ebola…[and that now] the G7 have made a commitment to actively strengthen health systems…because crises such as Ebola are much less severe when there are functioning health systems."[20] This was promising as the Ebola crisis was clearly coming to its end and politicians could have ignored the issue. In contrast to previous summits, this was clearly still viewed as important. For example, at the last summit in Germany (Heiligendamm 2007), health had been more or less kicked off the agenda after climate change became the key global issue just prior to the conference. Some governments, particularly the Japanese government, had in the past used the G7/G8 gatherings to emphasize the importance of health systems,[21] but it was difficult to see how it mattered.

Among the high-income countries, governments have reacted to the Ebola outbreak by providing substantial amounts of emergency aid (see Table 1). The aid was provided and channeled in different ways. National development institutes like the German GIZ and the United Kingdom's (UK) Department for International Development (DfID) got involved. The German GIZ, for example, supported the building of an isolation unit in a children's hospital in Freetown, Sierra Leone, and provided medicines. GIZ also engaged in the provision of food, among other ways.[22] UK DfID launched an Ebola Emergency Response Fund (DEERF) to improve Ebola treatment and support isolation unit beds and laboratory testing.[23] Some countries, such as the US, the UK, and China, used their military to support affected countries.[24] In general, aid concentrated on health care provision, including Ebola Treatment Centers (ECTs), isolation/treatment beds, and medical teams; knowledge, including technical assistance and education of health personnel; and laboratory testing (see

also Table 1). Not all countries contributed in the same way. Some of them channeled most of their contributions through other agencies. For example, the Dutch government argued "The Netherlands has provided organizations such as the UN, the Red Cross, and MSF with financial support. These organizations specialize in emergency aid. They know best what resources and personnel are needed."[25]

Nevertheless, from the reported data, it is also obvious that the share of support that went beyond the concrete fight of Ebola infections and spread is remarkably small. Out of the over US $1.7 billion of the donations included in this analysis, less than US $20 million was directed to more general health system support. The three most affected countries, Sierra Leone, Liberia and Guinea, all benefited to some extent. Looking at the donor side, apart from a rather small contribution from Germany and Switzerland, France provided all of that support.[26]

International (governmental) organizations

However, this limited support of health systems coming directly from national governments might not be the whole story. It is obvious that much of the national aid has been channeled through international organizations, including those with a long history of generating knowledge about, and issuing guidance on, the development and reform of national health systems, particularly WHO. It was mainly WHO, the United Nations Children's Fund (UNICEF), and the World Food Program (WFP), but also the UN Mission for Ebola Emergency Response (UNMEER), the Security Council (SC), UN Women, the International Organization for Migration (IOM) and other UN organizations that received contributions for their activities for Ebola-affected countries and societies.

Given its mandate on the "attainment by all peoples of the highest possible level of health,"[27] WHO has traditionally been the main actor in reporting and alerting the world to major infectious disease outbreaks, including previous Ebola outbreaks. WHO also convened a first international emergency meeting with the intention to tackle the Ebola epidemic in August 2014.[28] The Ebola outbreak caused "the largest emergency operation the [WHO] has ever undertaken,"[29] and the organization has supported and coordinated a significant part of the measures to fight this Ebola outbreak by sending technical experts, providing protective equipment, deploying epidemiologists for disease detection, training health workers, and so on.[30] Furthermore, WHO coordinated the Global Outbreak Alert and Response Network (GOARN) with over 500 experts.

Nevertheless, as with other infectious disease outbreaks in the recent past, WHO was criticized for how it responded to this global health emergency. It was blamed for its weak and slow reaction.[31] However, and particularly concerning issues of more general health systems strengthening or horizontal approaches to development aid in health, WHO initiatives and concepts have been crucial. WHO has run and supported various initiatives to strengthen health systems so as to make societies less vulnerable in case of specific health emergencies. Over the past decades, a considerable number of reports on health systems have been produced and disseminated by, or in collaboration with, WHO that could now serve as useful starting points to conceptualize a longer-term approach to globally strengthening health systems.[32] The WHO's 2015 Strategic Response Plan is not fully convincing on this point, however. The annex of this document mentions as output 3.4 "Support planning for the establishment of future resilient health systems," but it is not particularly clear about what that implies for future health systems strengthening. In terms of its mandate and resources, it is questionable if there is much more WHO

can do. As reported in WHO's 2015 Strategic Response Plan[33], the organization has still over 700 staff in Ebola-affected regions. It describes three phases of response, the first of which was focused on tackling the increase in cases as quickly as possible; the second concerned "the rapid scale-up of case finding, contact tracing, and intense community engagement to interrupt residual transmission chains," and the third phase is about "driv[ing] the number of cases to zero." In this context, WHO was an important coordinative player at the international level.

The Ebola outbreak was also considered threatening enough to lead the UN Security Council to declare Ebola a threat to peace and security internationally. As a consequence, UN Secretary-General Ban Ki-moon established a special UN mission, the so-called UN Mission for Emergency Ebola Response (UNMEER). This was a temporary measure to tackle the Ebola outbreak. It went into operation in September 2014, and phased out in summer 2015. Furthermore, a UN Foundations Ebola Response Fund has been founded to raise money for the fight against Ebola. While important in facilitating the fight against this particular Ebola outbreak, this is clearly not part of a strategy to make more comprehensive health system for the prevention of future outbreaks. However, the World Bank says "the World Bank Group, the World Health Organization, and other partners, are developing a plan for a new Pandemic Emergency Facility that would enable resources to flow quickly when outbreaks occur."[34] Such a mechanisms could include elements of health system strengthening.

The World Bank (Group) has brought together a substantial monetary amount (US $1.62 billion) for the affected countries. Following the US, this was the highest amount of aid provided by a single actor. The World Bank, in the past, has produced important work on health systems,[35] which makes one wonder to what extent the Ebola response is embedded in, or linked to, broader approaches to the development of health systems within World Bank work and initiatives. The grants and loans from the World Bank were designated to rebuild health systems, social safety nets, and agriculture. In information that was provided to help the most Ebola-affected countries, "strengthening health systems and front line care" is mentioned as one of the five priority areas.[36] The World Bank's Statement of the Meeting Convening Partners, "From Ebola to More Resilient Health Systems,"[37] proves that in this case, indeed, there seem to be a more practical commitment to health systems. The World Bank announced "it would provide at least US $650 million…to help Guinea, Liberia, and Sierra Leone recover from the impact of the Ebola crisis and advance their longer-term development needs. The priority areas of this new funding will be strengthening health systems and frontline care,…cash transfers and other social protection programs." Nevertheless, this is again a rather small amount for a huge task, especially when compared to the over US $1.5 billion in World Bank financing for Ebola response.[38]

Groups of Countries as global social policy actors

There are yet other instances of transnational social policies, namely groups of countries or world-regional associations. In the global social policy and governance literature as in other related fields, the BRICS as a group of emerging economies has come more into focus. On the one hand, this reflects the increasing economic power of the BRICS countries; on the other hand, there are also discussions about a new, alternative form of development aid. Particularly China has emphasized the value of its specific approach to development aid.[39] Indeed, when the extent of the Ebola epidemic became evident, also the BRICS considered appropriate responses. That

was partly due to the fact that there are significant economic exchanges between the BRICS and the affected countries. However, the BRICS also have some joint understanding of the importance of strengthening health systems formulated in their 2011 Beijing Declaration, namely that "[the] strengthening of health systems and health financing in developing countries in all regions must be the central goal of the global health community."[40] In statements given at the end of 2014, the BRICS countries acknowledged a more important role for themselves in global health matters, and in particular with regard to Ebola.[41] In a contribution to *International Health Policies*, Guanyang Zou comments "[i]n comparison to former colonial powerhouses such as the US and the UK, BRICS countries have played a constructive but secondary role in responding to Ebola emergency."[42] To what extent this had any reflection in the concrete response of BRICS countries is difficult to see. Overall, apart from China, the Ebola aid from BRICS countries appears rather modest.

The African Union (AU) also benefitted from some of the donors' commitments, channeled through this regional organization.[43] Important here is, for example, inter-regional support structures, such as those from the European Union (EU) to Africa. In the second report on EU Ebola Coordination, it is reported that the EU pledged €1.38 billion, of which €415 million came from the EU budget, in support of the fight against Ebola. However, the focus is primarily on "getting to zero," not quite on a longer-term perspective for strengthening health systems.[44] Even though, at a High-level Meeting on "Ebola: The Road to Recovery," the EU statement was "The EU has aligned its development projects to national priorities of Ebola affected countries, focusing on budget support and key sector such as health, education and agriculture…These projects will support the recovery and development of health systems,"[45] out of the projects listed in the Financial Tracking Service database from aid from the European Commission, only one project of US $36.9 million was explicitly dedicated to health systems, including health services, water and sanitation, food security.

CONCLUSIONS AND DISCUSSIONS: FROM A MISSED OPPORTUNITY TO LESSONS FOR THE FUTURE

This article has shown that the outbreak and spread of Ebola in 2014, leading to a "public health emergency of international concern," reminded the international community of the importance and meaning of strong health systems but that the response to Ebola, so far, has not been impressive regarding general health system strengthening. The links between Ebola and health systems appear to be rather rhetorical ones; the share of commitment is very much limited and only visible for very few donor countries.

To be fair, the global efforts to fight the disease have now proven to be successful. Currently, there are no new infections of Ebola reported. However, this only solves part of the problem – the economies, social protection, and health systems of those countries that were most affected have suffered in multiple ways, and were not been strong at the outset. The data presented in this article shows how little there is in terms of "real" commitment to supporting long-term processes to develop health systems. As has been illustrated, it is not only very few donors that have explicitly allocated funds to strengthening health systems; the few who have, mainly France, Germany and the World Bank, have committed only a small share of their total spending on Ebola to health systems.

This neglect of strengthening health systems contradicts with public statements from the beginning of the Ebola crisis onwards that emphasized that the

dramatic spread of the disease was strongly connected to the inability of local and national health systems to respond appropriately; and with open support for the idea that better health systems are needed to improve the living conditions of people in the poorest countries as well as to prevent similar infectious disease outbreaks.

The shock and fear that came with this unprecedented spread of the Ebola virus clearly had the potential to change things. The Western world was considerably alert to and worried about the threat of having the disease spread across the globe – a disease that nobody has a cure for, not even those countries with the best health infrastructure and medical procedures. Economic interests, trade links, and real senses of global solidarity also nurtured the efforts to tackle the disease.

From that perspective, this global health emergency certainly had a potential to change global health policies. The fact that health systems in some of the affected countries were completely overwhelmed in controlling the spread of the Ebola virus at an early stage struck a nerve; countries may receive ODA on a permanent basis, they may host numerous development organizations, many of them in the field of health, and yet the development of health systems is very limited. This hints at a number of issues, situated at different levels of social and health policy making in a development context.

Despite long and better knowledge about the importance and value of sustainable health systems, most global health initiative continue to target particular diseases and groups ("vertical programs"). Horizontal approaches, including claims to direct development aid for health into the public budgets of countries in order to build better public health systems are not new,[46] but frequently overlooked.

At a regional level, there is the problem of the potential of mutual support in a context of common development needs and a common crisis situation. If the regional funding of social and health policy support is dependent on external donors, this limits the control over appropriate measures by regional decision-makers. At a global level, the symptomatic weakness and criticism of WHO continues to be an issue. In such discourses, multiple donors and potential global health actors may be ignored when the focus is on the shortcomings of WHO.

Furthermore, what needs to be considered is that, due to the difficulties in controlling the spread of the disease at an early stage, the Ebola outbreak generated multiple crises with several social and economic hardships extending to far more parts of the population than the Ebola-affected communities. When the Ebola virus began to spread in some of the least developed countries, fiscal deficits increased in countries with severe structural vulnerabilities and very limited economic growth. Furthermore, imposed travel and trade restrictions caused by the Ebola outbreak put another burden on national economies. Coping with these problems in a situation that, according to a report of the UN Economic Commission for Africa (2015), "calls for heavy public spending on health to contain the disease, while social protection needs grow quickly" [47] is a very difficult task. It alerts us, though, to the fact that "getting to zero" is not the end of the story.

This "renewed" global awareness, if taken seriously, can draw on substantial knowledge and ideas that have been developed over the past decades in a number of international organizations and that are supported by many other global social and health policy actors. The Ebola outbreak created a window of opportunity to get global health policies and actors more committed to supporting health systems to prevent similar future crises, and help the countries that have been strongly affected by the outbreak in multiple ways to recover and improve. Unfortunately, despite even recent statements such as at the G7 in summer 2015, there is not much evidence that there will be much of such a real commitment.

Therefore, taking the global social policy and governance perspective seriously, the health and other needs of the poorest countries, the fragmentation of health systems, and the uncertainty regarding appropriate health systems[48] need to be contextualized and addressed in multi-level policy settings. The broad consensus on the problem and the danger of weak health systems only illustrated, and have been made worse, by the Ebola crisis. It would need to be turned from a collaborative emergency response to a multi-actor, multi-level long-term commitment. This could draw on important conceptual work done within WHO and World Bank and involve social redistribution of resources at different levels (local, national, regional and global). This is what should be at the core of re-constructing global social and health governance, and the Ebola crisis could be the beginning of such a process.

What is at stake is reserve funds in the anticipation of future health emergencies and global insurance institutions that provide crisis support in a quick and de-politicized manner. A type of insurance, though with a more general focus on inequality, has also been thought about by Robert J. Shiller as an "innovative scientific finance and insurance, both private and public, to reduce inequality, by quantitatively managing all the risks that contribute to it." He continues to explain that "[i]nequality insurance would require governments to establish very long-term plans to make income-tax rates automatically higher for high-income people in the future if inequality worsens significantly, with no change in taxes otherwise…inequality insurance…addresses risks beforehand."[49]

An alternative funding/insurance idea in case of health emergencies was suggested in the form of an International Health Systems Fund, situated at WHO.[50] Such a fund would have combined emergency response mechanisms with support to health system development. A significant allocation of aid money, though, would need to be committed – the proposal mentions a "multibillion dollar investment channeled to low-income countries".[51] A similar proposal was made by the World Bank for a pandemic emergency facility that would have money available for future pandemic response, conceptualized as an insurance model.[52]

In light of all that, growing out of the Ebola response, it would be welcome to see a more intense engagement with the strengthening of health systems in the framing of the post-2015 development agenda. While the three health MDGs have supported rather vertical approaches, the SDGs have the potential to more systemic change. Target 8 of the proposed Sustainable Development Goals (SDGs) includes the achievement of "universal health coverage (UHC), including financial risk protection, access to quality essential health care services, and access to safe, effective, quality and affordable essential medicines and vaccines for all."[53] A number of proposals about UHC have been produced and disseminated for some time now, preceded and accompanied by various other concepts, ideas, reports and recommendations on the role of health systems. While this may "represent an important addition to the agenda and has widespread backing from countries and global health institutions,"[54] the question remains if we will see a change at last. And whether Ebola, at last, will make a change.

Table 1: National contributions and pledges to respond to the Ebola crisis

	ETCs[lv] or related items	Technology. assistance	Educating health personnel	Medical teams	Isolation/ Treatment units/beds	Medicines	Medical equipment	Treatment	Laboratory testing	Support to IOs	Support to regional organisations	Support to NGOs	Amount in US$[lvi]	Explicit health system support
Australia	+		+							UNICEF, WHO, SC[lvii]		Caritas, WVI, Plan, RedR	38 million	
Canada		+								IFRC[lviii], OCHA[lix], WHO, UNICEF, SC, WFP		ACF[lx], OXFAM, CARE, MSF[lxi], Plan, Samaritan's Purse	78 million	
China		+[lxii]	+	+	+	+	+		+	WHO, WFP	AU		47 million	
France		+	+		+			+	+	WFP, UNMEER, WHO			108.4 million (+28 million)	4.8 million (Liberia) 12.3. million (Guinea) 1.5 million health care continuity
Germany	+				+	+				WFP, UNICEF, WHO, UNICEF, SC	Ebola Trust Fund	German Doctors, MSF, Help, Plan, SOS Kinderdorf, Oxfam, Diakonie Katastrophenhilfe, Caritas, ICRC, THW	165 million (13.4 million)	890.930 (Sierra Leone)
India							+			WHO			10.7 million (+2.05 million)	

Japan[lxiii]	+	+					+			UNICEF, IFRC, WFP, WHO, OCHA, UN Women			79 million	
Netherlands										UNICEF,WHO		IFRC, MSF, Oxfam	72.9 million	
Norway										WFP, UNICEF, WHO		Plan, MSF, IFRC	40.7 million	
Russia										WHO, UNICEF, World Bank, WFP			20.5 million (+ 8 million)	
Sweden				+						WFP, SC, UNICEF, WHO, OCHA, UNMEER	ACF	RC, Plan, MSF	87.4 million (+ 12.9 million)	
Switzerland										UNICEF, WFP, UNMEER, FAO		RC, Oxfam, MSF, IFRC	31.3 million	
UK[lxiv]	+			+	+		+	+	+	WFP, SC, WHO, UNMEER, OCHA, UNICEF, IOM		MSF, IFRC, Plan	363.8 million (+147.6 million)	
US	+		+	+	+				+	UNICEF, WHO, IOM, OCHA, WFP	ACF, AU	Oxfam, Plan, Christian Aid, IFRC, Care, Samaritan's purse	1.75 billion	

Alexandra Kaasch *is an Assistant Professor in the Faculty of Sociology at Bielefeld University.*

---

[1] World Health Organization. "Ebola Situation Report - 9 December 2015." http://apps.who.int/ebola/current-situation/ebola-situation-report-9-december-2015.
[2] World Health Organization. "Ebola Situation Report - 17 June 2015." http://apps.who.int/ebola/current-situation/ebola-situation-report-17-june-2015.
[3] Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH. "Die Zukunftscharta „Einewelt – Unsere Verantwortung." https://www.zukunftscharta.de/.
[4] For the concept, see World Health Organization. "The World Health Report 2000 - Health Systems: Improving Performance." Geneva, Switzerland, 2000.
[5] Following Deacon, Bob, Michelle Hulse, and Paul Stubbs. *Global Social Policy: International Organizations and the Future of Welfare*. London: SAGE, 1997.; Deacon, Bob. *Global Social Policy and Governance*. London: SAGE, 2007.; Kaasch, A. *Shaping Global Health Policy. Global Social Policy Actors and Ideas About Health Care Systems*. Hampshire: Palgrave Macmillan UK, 2015.; Kaasch, A., and Kerstin Maartens. *Actors and Agency in Global Social Governance*. USA: Oxford University Press, 2015.*;* Yeates, Nicola (ed.). *Understanding Global Social Policy*. Bristol: The Policy Press, 2008.
[6] For the functions of health care systems, see Rothgang, Heinz, Mirella Cacace, Lorraine Frisina, Simone Grimmeisen, Achim Schmid, and Claus Wendt. *The State and Healthcare. Comparing Oecd Countries*. Basingstoke: Palgrave Macmillan, 2010.; World Health Organization. "The World Health Report 2000 - Health Systems: Improving Performance." Geneva, Switzerland, 2000.
[7] Koivusalo, Meri, and Eeva Ollila. *Making a Healthy World: Agencies, Actors and Policies in International Health*. . Helsinki: Stakes [and] London/New York: Zed Books, 1997.; Lee, Kelley, and Hilary Goodman. "Global Policy Networks: The Propagation of Health Care Financing Reform since the 1980s." In *Health Policy in a Globalising World*, edited by Kelley Lee, Kent Buse and Suzanne Fustukian, 97-119. Cambridge: Cambridge University Press, 2002.
[8] Lee, Kelley. *Global Institutions: The World Health Organization (WHO)*. Abingdon: Routledge, 2008. Peabody, John W. "An Organizational Analysis of the World Health Organization: Narrowing the Gap between Promise and Performance." *Social Science & Medicine* 40, no. 6 (1995): 731-742.; Siddiqi, Javed. 1995. *World health and world politics: the World Health Organization and the UN system*. Columbus: Univ. of South Carolina Press.
Taylor, Allyn L. "Global Governance, International Health Law and Who: Looking Towards the Future." *Bulletin of the World Health Organization* 80 (2002): 975-980.
[9] Ruger, Jennifer Prah. "The Changing Role of the World Bank in Global Health." *American Journal of Public Health* 95, no. 1 (2005): 60-70.; Wogart, Jan Peter. "Global Health Issues and the World Bank's Involvement." In *Globalisation, Global Health Governance and National Health Politics in Developing Countries : An Exploration into the Dynamics of Interfaces*, edited by Wolfgang Hein, Lars Kohlmorgen and Ubersee-Institut Deutsches, 191-202. Hamburg [Germany]: Deutschen Ubersee-Institut, 2003.; Lethbridge, Jane. "The Promotion of Investment Alliances by the World Bank: Implications for National Health Policy." *Global Social Policy* 5, no. 2 (August 1, 2005 2005): 203-225.
[10] Bartsch, Sonja. "Global Public-Private Partnerships in Health: Potentials and Limits." In *Globalisation, Global Health Governance and National Health Politics in Developing Countries: An Exploration into the Dynamics of Interfaces*, edited by Wolfgang Hein, Lars Kohlmorgen and Ubersee-Institut Deutsches, 225-37. Hamburg [Germany]: Deutschen Ubersee-Institut, 2003.; Bartsch, Sonja. "Global Public-Private Partnerships in Health: A Question of Accountability and Legitimacy." In *2007 Wall Summer Institute for Research*. Vancouver, 2007.; Buse, K., and G. Walt. "Global Public-Private Partnerships: Part Ii--What Are the Health Issues for Global Governance?". *Bulletin of the World Health Organization* 78, no. 5 (2000): 699-709.; Buse, Kent, and Gill Walt. "Globalisation and Multilateral Public-Private Health Partnerships: Issues for Health Policy." In *Health Policy in a Globalising World*, edited by Kelley Lee, Kent Buse and Suzanne Fustukian, 41-62. New York: Cambridge University Press, 2001.
[11] Bartsch, Sonja. *The Global Fund to Fight Aids, Tuberculosis and Malaria: Establishment, Current Issues and Future Challenges. Salzburg Seminar on the Governance of Health*. Salzburg: OSI/Yale University/Temple University, 2005.

[12] Kaasch, Alexandra. "Contesting Contestation: Global Social Policy Prescriptions on Pensions and Health Systems." *Global Social Policy* 13, no. 1 (2013): 45-65.
[13] For more detail see *Kaasch, A.* Shaping Global Health Policy. Global Social Policy Actors and Ideas About Health Care Systems. *Hampshire: Palgrave Macmillan UK, 2015.*
[14] More generally, as Ruger (2015) reminds us that the current development paradigm regarding health is not uncontested. Ruger, Jennifer Prah. "Ethics of Development Assistance for Health." *Hastings Center Report* 45, no. 3 (2015): 23-26.
[15] World Health Organization. "Statement on the 1st Meeting of the Ihr Emergency Committee on the 2014 Ebola Outbreak in West Africa." news release, 2014, http://www.who.int/mediacentre/news/statements/2014/ebola-20140808/en/.
[16] World Health Organization. "IHRr Procedures Concerning Public Health Emergencies of International Concern (PHEIC)." http://www.who.int/ihr/procedures/pheic/en/.
[17] Welt Hunger Hlife. "The Non-Medical Impacts of the Ebola Crisis in Sierra Leone." 2014, http://www.welthungerhilfe.de/fileadmin/user_upload/Mediathek/Mediathek_int/Fachpapiere/Sierra-Leone-Ebola-Study-Non-Medical-Impacts-Welthungerhilfe-October2014.pdf.
[18] Financial Tracking Service. "Ebola Virus Outbreak - West Africa - April 2014." https://fts.unocha.org/pageloader.aspx?page=emerg-emergencyDetails&emergID=16506.
[19] "G7 Foreign Ministers' Statement on Ebola." news release., 25 September 2014, http://www.g8.utoronto.ca/foreign/formin140925-ebola.html.
[20] G7 Germany 2015. "Strengthening Health Care Systems, Fighting Epidemics, Increasing Immunisation Coverage." http://www.bmz.de/g7/en/Entwicklungspolitische_Schwerpunkte/Gesundheitssysteme_staerken/index.html.
[21] Reich, Michael R., and Keizo Takemi. "G8 and Strengthening of Health Systems: Follow-up to the Toyako Summit." *The Lancet* 373, no. 9662: 508-515.
[22] Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ). "Weiterhin Im Einsatz Gegen Ebola." https://www.giz.de/de/mediathek/29811.html.
[23] Gov.UK. "DFID Emergency Ebola Response Fund." https://www.gov.uk/international-development-funding/dfid-emergency-ebola-response-fund.
[24] For example, from the British military 750 health workers were sent to Sierra Leone and the US Department of Defense shows on their website that, amongst other things, it engaged in the training of 1,539 health care workers and support staff, formed a 30-member medical support team, provided a number of Ebola treatment units and hospital beds, and facilitated the testing of 4,700 blood samples.
[25] Government of the Netherlands. "Action Taken by the Netherlands and the International Community to Tackle Ebola." https://www.government.nl/topics/ebola/contents/action-taken-by-the-netherlands-and-the-international-community-to-tackle-ebola.
[26] France supported Liberia's and Guinea's health system with about US $7.8 and $12.3 million respectively. Germany contributed about US $890,000, out of more than $165 million, for strengthening health systems and educating target communities in Sierra Leone. Switzerland dedicated about US $4.7 million, out of over $31 million, to restoring public health services in Liberia.
[27] World Health Organization. "Constitution of the World Health Organization." http://apps.who.int/gb/bd/PDF/bd47/EN/constitution-en.pdf?ua=1
[28] World Health Organization. "Statement on the 1st Meeting of the IHR Emergency Committee on the 2014 Ebola Outbreak in West Africa." news release, 8 August 2014, 2014, http://www.who.int/mediacentre/news/statements/2014/ebola-20140808/en/.
[29] World Health Organization. "2015 WHO Strategic Plan: West Africa Ebola Outbreak." 2015, http://apps.who.int/iris/bitstream/10665/163360/1/9789241508698_eng.pdf?ua=1&ua=1.
[30] World Health Organization. "Ebola Virus Disease Outbreak." http://www.who.int/csr/disease/ebola/en/.
[31] See, for example, Moon, Suerie, Devi Sridhar, Muhammad A. Pate, Ashish K. Jha, Chelsea Clinton, Sophie Delaunay, Valnora Edwin*, et al.* "Will Ebola Change the Game? Ten Essential Reforms before the Next Pandemic. The Report of the Harvard-LSHTM Independent Panel on the Global Response to Ebola." *The Lancet* 386, no. 10009: 2204-21.
[32] To only mention a few: World Health Organization. "The World Health Report 2000: Health Systems: Improving Performance." Geneva: World Health Organization, 2000.; World Health Organization. "World Health Report 2008. Primary Health Care. Now More Than Ever." Geneva: World Health Organization, 2008, http://www.who.int/whr/2008/whr08_en.pdf.; World Health Organization. "World

Health Report 2010: Health Systems Financing: The Path to Universal Coverage." Geneva: World Health Organization, 2010, http://www.who.int/whr/2010/en/.
[33] World Health Organization. "2015 WHO Strategic Plan: West Africa Ebola Outbreak." 2015, http://apps.who.int/iris/bitstream/10665/163360/1/9789241508698_eng.pdf?ua=1&ua=1.
[34] The World Bank. "World Bank Group Ebola Response Fact Sheet." http://www.worldbank.org/en/topic/health/brief/world-bank-group-ebola-fact-sheet.
[35] For example, The World Bank. "Healthy Development. The World Bank Strategy for Health, Nutrition, and Population Results." Washington, DC: World Bank, 2007.
[36] The World Bank. "Ebola: World Bank Group Provides New Financing to Help Guinea, Liberia and Sierra Leone Recover from Ebola Emergency." news release, April 17, 2015, http://www.worldbank.org/en/news/press-release/2015/04/17/ebola-world-bank-group-provides-new-financing-to-help-guinea-liberia-sierra-leone-recover-from-ebola-emergency.
[37] The World Bank. "Statement of the Meeting Convening Partners: "From Ebola to More Resilient Health Systems"." news release, April 17, 2015, http://www.worldbank.org/en/topic/ebola/brief/from-ebola-to-more-resilient-health-systems-statement-of-the-meeting-convening-partners.
[38] The list of international organisations contributing to the fight against Ebola is of course much longer than that. It is, however, beyond the scope of this paper to discuss all of these organizations in detail. For example, the International Labour Organisation (ILO) has launched an initiative to support health workers. International Labour Organization. "Ilo's Role and Response to the 2014 Ebola Outbreak." news release, October 31, 2014, http://www.ilo.org/safework/areasofwork/occupational-health/WCMS_302846/lang--en/index.htm.
[39] Grépin, Karen A., Victoria Y. Fan, Gordon C. Shen, and Lucy Chen. "China's Role as a Global Health Donor in Africa: What Can We Learn from Studying under Reported Resource Flows?". *Globalization and Health* 10, no. 1 (2014): 1-11.
[40] BRICS. "Beijing Declaration." Section 6, http://www.brics5.co.za/about-brics/sectorial-declaration/health-ministers-meeting/beijing-declaration/.
[41] BRICS, Ministry of External Relations. "Communiqué of the Iv Meeting of Brics Health Ministers." news release, December 5, 2014, http://brics.itamaraty.gov.br/category-english/21-documents/242-ivhealth.
[42] Zou, Guanyang. "BRICS and Global Health: The Case of the Ebola Response." *International Health Policies* (2015), http://www.internationalhealthpolicies.org/brics-and-global-health-the-case-of-the-ebola-response/.
[43] African Union Support to EBOLA Outbreak in West Africa. "Background." http://pages.au.int/ebola/blog.
[44] European Commission. "Second Report from Christos Stylianides, EU Ebola Coordinator, to the European Council (18 March 2015)." https://ec.europa.eu/commission/2014-2019/stylianides/announcements/second-report-christos-stylianides-eu-ebola-coordinator-european-council-18-march-2015_en.
[45] European Commission. "High-Level Meeting on Ebola: The Road to Recovery (Washington, 17 April 2015)." news release, April 22, 2015, http://ec.europa.eu/commission/2014-2019/mimica/announcements/high-level-meeting-.
[46] See, for example, WHO Department of Health Systems Financing. Health Financing Policy. "General Budget Support in Developing Countries: Ensuring the Health Sector's Interest." In *Technical briefs for policy-makers,* 2008, http://www.who.int/health_financing/documents/pb_e_08_2-budget_support.pdf.
[47] Lopes, Carl. "UN Under-Secretary-General of ECA." In *UN Economic Commission for Africa*, xiii, 2015.
[48] Kaasch, A. *Shaping Global Health Policy. Global Social Policy Actors and Ideas About Health Care Systems.* Hampshire: Palgrave Macmillan UK, 2015.
[49] Schiller, Robert J. "Inequality Disaster Prevention." *Project Syndicate* (2014). Published electronically May 14, 2014. http://www.project-syndicate.org/commentary/robert-j--shiller-praises-thomas-piketty-s-invaluable-contribution-to-a-debate-that-is-far-from-over?barrier=true.
[50] A previous proposal by the 2011 IHR Review committee for a standing US $100 million contingency fund in case of declared emergency was never turned into practice. Gostin, Lawrence O., and Eric A. Friedman. "A Retrospective and Prospective Analysis of the West African Ebola Virus Disease Epidemic: Robust National Health Systems at the Foundation and an Empowered Who at the Apex." *The Lancet* 385, no. 9980: 1902-1909.
[51] Gostin, Lawrence O. "Ebola: Towards an International Health Systems Fund." *The Lancet* 384, no. 9951: e49-e51.

[52] The World Bank. "World Bank Group President Calls for New Global Pandemic Emergency Facility." news release, October 10, 2014, http://www.worldbank.org/en/news/press-release/2014/10/10/world-bank-group-president-calls-new-global-pandemic-emergency-facility.
; see also Gostin, Lawrence O., and Eric A. Friedman. "A Retrospective and Prospective Analysis of the West African Ebola Virus Disease Epidemic: Robust National Health Systems at the Foundation and an Empowered Who at the Apex." *The Lancet* 385, no. 9980: 1902-1909.
[53] United Nations General Assembly. "Report of the Open Working Group on Sustainable Development Goals Established Pursuant to General Assembly Resolution 66/288." 2014, http://www.un.org/ga/search/view_doc.asp?symbol=A/68/L.61&Lang=E.
[54] Buse, Kent, and Sarah Hawkes. "Health in the Sustainable Development Goals: Ready for a Paradigm Shift?". *Globalization and Health* 11, no. 1 (2015): 1-8.
[lv] Ebola Treatment Centres
[lvi] Calculated with data from the Financial Tracking Source [link]
[lvii] Security Council
[lviii] International Federation of Red Cross and Red Crescent Societies
[lix] Office for the Coordination of Humanitarian Affairs
[lx] Action Contre la Faim, http://www.actioncontrelafaim.org last accessed 12.12.2015
[lxi] Medecins sans Frontieres
[lxii] On infectious disease control
[lxiii] http://www.jica.go.jp/usa/english/office/others/newsletter/2014/1409_10_01.html last accessed 12.12.2015
[lxiv] DfID launched Ebola Emergency Response Fund (DEERF)