Introduction to the report: Governing epidemic-prone infectious disease and antimicrobial resistance: a review and case for governance 'from below'

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Background

The combined impacts of global travel, mass migration, urbanisation, weakened health systems, changing human-animal interactions, and viral mutations, have given rise to significant infectious disease threats (here epidemic-prone infectious disease outbreaks and resistance to antimicrobials); problems that transcend the coping strategies of conventional systems of governance. Country-specific initiatives are jeopardized by challenges well beyond the control of any one system of health or one sector alone. The implementation of established local and national health governance is unlikely to be adequate when infectious disease outbreaks emerge and are fueled by complex factors that even those who model threats and epidemics struggle to account for. Similarly, antimicrobial resistance is a complex problem requiring a response beyond individual state systems. Furthermore, recent experience of disease outbreaks such as Ebola and now SARS-CoV-2 has underscored that responding to threats effectively requires overcoming organizational, sectoral, disciplinary and methodological boundaries. This is again patently evident as the whole globe struggles to respond to the outbreak of a novel emergent disease, COVID-19, now declared a pandemic. As the coronavirus has spread from country to country, we are witnessing real time case studies of how disease preparedness and response play out in settings with different histories of outbreaks and of public health, different underlying disease burdens, different socio-cultural and political-economic realities, and different health systems. Inequalities and vulnerabilities have been laid bare, both within countries and globally. Reflections on what constitutes effective preparedness and response in different settings will turn to questions of governance, and there will likely be much further debate about how to negotiate the complex social, legal, economic, political and ethical trade-offs that recent events have brought to the fore.

In particular, social science perspectives have to date been undervalued with respect to conceptualising new requirements for governance of infectious disease threats, for both outbreaks of epidemic-prone infectious diseases as well as antimicrobial resistance (AMR). Yet there are many contributions that social science perspectives can make to improving the governance and response. One prominent example, now increasingly acknowledged (e.g. by the original EU call that was awarded to SoNAR-Global, and by the World Health Organization (WHO), United Nations Children's Fund (UNICEF) etc.), is to improve the design and effectiveness of interventions by promoting better understandings of the dynamic local contexts they will be used in. As the WHO and others acknowledge, we must not only design and implement successful responses; we must also know how to scale up and translate measures across diverse sets of scientific and social practices. Here, success cannot be

achieved merely by improving relations amongst global health institutions, governments, and local communities (the typical public health paradigm). We must also understand what makes people, groups or sectors vulnerable and what dimensions of social difference are salient, including how vulnerabilities emerge through public health responses. This would also need to recognise that when the stability of any community is seriously threatened, local inequalities can be exaggerated. Social science contributions to the governance of infectious disease threats thus go beyond improving risk communication and community engagement. As such, social science expertise is central to effective governance and related responses to infectious disease threats and to rethinking the framing of these responses. In this report we seek to foreground how insights from social science, and anthropology in particular, can contribute to a broader understanding of governance of infectious disease threats.

This introduction to the report on governance of infectious disease threats lays out the concepts that we have employed with the aim of broadening the view of governance, specifically in order to highlight an understanding of 'bottom-up' governance as a complement to the conventional legal and public health understandings of more 'top-down' mechanisms and strategies for managing infectious disease threats. We begin by introducing the approach that the report takes to 'governance', and the framework that we have adopted to explore challenges and alternative approaches to governance that might complement more conventional approaches orchestrated 'from above' by governments and agencies. We then describe the structure of the report and the method of desk-based review that we have followed.

Understandings of Governance

There are many different understandings of governance, depending for example on the perspectives of different groups and institutions. In this report, we wish to emphasise these different understandings and the distinctive framings of the problem of infectious disease threats that they bring. We have adopted a broad approach to governance which understands 'governance' to refer to the political and institutional processes and power relations which shape how groups understand, organise, make decisions and act within complex socio-ecological systems, drawing on Leach and colleagues (2007). 'Governance', understood in this way, amounts to far more than simply what 'government' does. Likewise, it transcends more conventional interpretations of governance in global health which emphasise legal frameworks, formal agreements between international power brokers, governments and agencies, and technical action plans for outbreak response and surveillance. This definition leaves room for a broader recognition that the 'conduct of conduct' in relation to what gets done – by whom, for who, how and when – prior to, during and after outbreaks of infectious disease can be opened up and analysed from alternative perspectives. This is likely to be shaped by a much wider range of actors, factors, processes and power relations operating across scales, sometimes in sync with one another, and sometimes in conflict (ibid.). A wide array of multi-level actors and 'like-minded' communities will cohere around particular narratives and paradigms for action, requiring a form of governance that is more open to multiple perspectives, and that embraces uncertainty and balances flexibility with strategies focused on stability (Michael and Madon, 2017). A broader understanding of governance that can embrace participation from a range of interest groups and is open to a more deliberative politics can be more inclusive of the voices of the people affected by infectious disease threats. It is this 'bottom-up' voice that social science analyses of disease outbreaks and AMR bring to the fore, even if these accounts have not been conventionally part of the literature on 'governance'. It is this body of work that we have

sought to include in this review, in order to foreground this hitherto neglected dimension of governance; what we are calling 'bottom-up' governance.

Governance Challenges

With these concepts in mind and underpinning all that follows, we have identified four governance challenges (drawing on Leach et al., 2007) which trouble existing approaches and which have implications for understanding and action:

1) **The scale(s) of the challenge -** addressing infectious threats requires cooperation across different levels and scales. For example, across national borders and among global health agencies, where requirements to govern preparedness and response transcend 'traditional' approaches to governance at the level of the nation state. Equally, events or activities at a micro, niche or 'local' level have powerful effects at higher levels. A challenge is how to address the multiplicity of relevant localities and the larger systems they are part of, and the vulnerabilities within and between them.

2) **The intersectoral challenge -** as health and society are interdependent, this challenge involves recognizing the role of non-health sectors in driving health threats, and engaging key actors in minimizing and responding to them. Another key challenge concerns the potential impact of broad social collapse if large outbreaks do emerge. The role of digital technologies in mediating information about threats means the tech sector is also core to this challenge.

3) **The interdisciplinary challenge** - as social science evidence is increasingly incorporated into decision-making for operational responses, it brings challenges of knowledge and data governance, of how to integrate diverse foci, methods, procedures and perspectives not only between the social sciences and biomedical and other disciplines, but also within social science.

4) **The inclusivity challenge -** this speaks to the nature of governance; critiques of top-down, Northern-centric and formal institutions of governance (in health and more broadly, in epidemics and in academia) have given rise to increasing recognition of the role and/or value of informal actors and institutions, of governance 'from below' as well as above, and of ensuring equal and meaningful participation of a diverse range of people and forms of expertise. This necessitates an understanding of governance that is inclusive of local-level and diverse circumstances and needs, and prioritizes citizen voice, accountability and justice. It must also understand the risk posed when these diverse voices and practices are not included or cannot understand each other. Key here is the recognition of vulnerability and resilience.

We argue that no successful response to an infectious disease threat can succeed without openly acknowledging and addressing these distinct challenges and the different cultures of practice involved. We suggest that addressing these challenges will require forms of governance and social science which are:

- **Power-aware** e.g. recognizing different forms of power and inequality, how it is distributed, who exercises it, when and how, and including a politics of knowledge.

- **Networked** e.g. distributed and decentralized governance, across diverse people, institutions, sectors, disciplines and media.

- **Deliberative** e.g. creating spaces and opportunities (face-to-face, online etc.) for interactions, agreements, disagreements, reflection and reformulating.

- **Adaptive** e.g. acknowledging complexity and uncertainty and creating conditions which enable adaptation and iterative processes.

This is illustrated in Table 1, a typology of governance that reflects these challenges and identifies alternative approaches that can complement more 'top-down' strategies le 'from above', and which are sensitive to the political and institutional processes and power relations which shape how groups understand, organise, make decisions and act within complex socio-ecological systems (Leach et al., 2007).

Table 1 Governance typology

GOVERNANCE	Rule and interest based	Networked	Adaptive, deliberative, reflexive
Entities and Spaces	Distinct, bounded organisations and interest groups (states, international organisations, civil society, private sector and corporations). Formal arenas and spaces.	Multiple actors, fuzzy boundaries, networked interactions across scales; multiple spaces (claimed, everyday, interstitial).	Shifting solidarities and interdependencies, institutions renegotiated through adaptation and deliberation; marginal, transient and inter-institutional spaces.
Emphases from social theory	Structures; formal rules and codes; relationships based on social conventions (e.g. sovereignty, assumed trust).	Actor orientation; agency (e.g. of bureaucrats, citizens); informal rules and norms; structuration of institutions through practice; path dependency.	Institutions, agency and relationships (re) negotiated through adaptation and deliberation.
Power and Knowledge	Power rooted in material political economy; centralised and hierarchical; competing political interests. Knowledge as 'truth speaks to power'; objective evidence and sound science; expertise constituted through official channels and hierarchies.	Power as dispersed (capillary) and operating through networks; power 'to' act as well as power over.	Power/knowledge as co-constituted through discourse; framings; multiple knowledges and forms of expertise including citizen and experiential; knowledge politics; co-construction of knowledge with institutions and governance processes.
Treatment of uncertainty	Plans and blueprints; assumptions of	Multiple interactions and contingencies in	Acknowledges radical uncertainty due to social

	certainty and stability in socio-technical-ecological systems; technical approach to risk.	political process recognised as creating uncertainty in governance processes and outcomes.	technological ecological dynamics (adaptive governance) and interaction of framings (reflexive governance). Learning, argumentation, deliberation.
e.g. infectious threats	International Health Regulations, National borders, WHO and Ministries of Health led; expert committees; global action plans and maps.	Interdisciplinary; value chain analysis e.g. formal and informal drug supply system.	'Community feedback' informing outbreak response; co-design of disease control interventions; vulnerability assessments and inclusion of marginalised populations.

Table 1. A typology of governance, adapted from Leach et al., 2007.

Structure of Report

This report takes the above approach to governance and the identified challenges and alternative approaches as its starting point. The report is divided into **Part 1**, which focuses on epidemic-prone infectious diseases, and **Part 2**, which focuses on AMR. In both Part 1 and Part 2, we present an overarching review of the literature on governance, with a particular emphasis on social science and anthropological literature. We describe the conventional public health approaches to governance, and the critiques which have emerged of such approaches. In both reviews, we then foreground literature that might not explicitly be oriented towards 'governance', but that illustrates 'bottom-up' perspectives and alternative governance arrangements that might assist in addressing the governance challenges identified above. We argue that these perspectives can show routes to more effective preparedness and response to infectious disease threats (both epidemics and AMR).

Epidemic-prone infectious disease outbreaks and AMR are distinct challenges. While responding to both requires governance models that include multi-level and multi-sectoral collaboration across government, scientific (including social scientific), private sector, and civil society actors and organisations, the temporal and practical implications of each challenge have relatively distinct implications. Although epidemic response necessitates preparedness (alongside ongoing preventative strategies), responding to threats as they emerge is a matter of acute action and requires rapid and dynamic mobilisation of institutions and networks. In contrast, AMR, while increasingly urgent, is a much more diffuse and 'slow-burning' health system issue that requires consistent efforts and attention to strike a balance between equity and access to anti-microbials on one hand, and policies, institutions and cultures to promote their 'rational' use on the other. In addition, the effects of AMR can be – though not necessarily – much more widely dispersed across sectors and populations, leading to the inequalities playing out in different ways. While social, cultural and economic power relations underpin both issues and must be reflected in effective governance models, the temporal and practical distinctions between these challenges lead us to treat each domain separately in this task.

These two kinds of infectious disease threats are thus reviewed separately in Part 1 and Part 2 of this report. In the section that follows, we outline the method adopted for each Part. In addition to the overarching reviews, each Part includes one or more case studies of a governance response. These case studies were selected at the first meeting of the SoNAR-

Global network, in order to cover the geographic regions and to harmonise with the focus across the work packages. For epidemic prone infectious disease, the selected case studies were Ebola in Uganda and Measles in Ukraine. For anti-microbial resistance, the selected case study was AMR in Bangladesh. These case studies follow the overarching reviews of literature. Each case study has been written to be read both as a component of this whole report, but also as independent pieces of work. We ask that readers forgive any repetition between the reviews and corresponding case studies that may have resulted from our attempt to make this possible.

Methods

Part 1: Governance of emerging epidemic-prone infectious disease threats

1. **Thematic review on the governance of epidemic threats.** This more conceptual review considers academic and grey literature on governance as it relates to emerging epidemic-prone disease response more broadly. This review takes a critical approach to how governance in this domain is defined and conceptualised, and maps dominant and alternative models and narratives, as well as the actors who champion them, and the relations of power that structure these.
2. **Case studies.** We conducted literature reviews of both academic and grey literature published on measles vaccination in Ukraine and Ebola outbreak response in Uganda to produce two case studies. Through the desk-based searches and engagement with our SoNAR-GLOBAL colleagues working in the respective regions, we attempted to map the 'governance ecosystem' in each case, with an emphasis both on the formal state structures for public health governance, as well as the responses of a wider range of actors. We then analysed these governance arrangements in the light of social science perspectives and the conceptual framework presented above, with the aim of identifying 'bottom-up' approaches to governance that could be harnessed to inform more effective, context-appropriate and equitable responses.

Part 2: Governance of AMR

1. **Thematic review on AMR governance.** This more conceptual review considers academic and grey literature on governance as it relates to AMR more broadly. This review takes a critical approach to how governance in this domain is defined and conceptualised, and maps dominant and alternative models and narratives.
2. **Case study.** We conducted a desk-based literature review including both academic and grey literature published on AMR in Bangladesh, focusing on explicit and implicit public health governance of AMR to map the more formal 'governance ecosystem'. Utilising perspectives from the social sciences we also highlighted important informal and under-acknowledged dimensions of AMR governance, and responses from a wider array of actors. In light of the governance framework presented above, we attempted to identify approaches that can inform a more effective form of governance that includes 'bottom-up' perspectives.

References

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