The Global Governance of Emerging Zoonotic Diseases: Challenges and Proposed Reforms

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Introduction: The Increasing Threat From Zoonotic Diseases

Zoonotic diseases, defined by the World Health Organization (WHO) as a disease or infection naturally transmissible between humans and animals, have posed a growing public health threat since the late twentieth century. Zoonotic diseases are classified as either endemic (always present in place and time), epidemic (sporadic in timing and geographic distribution), or emerging and reemerging (newly appearing in a population, or, having existed previously, rapidly increasing in incidence or geographical range). An estimated 60 percent of known infectious diseases and up to 75 percent of new or emerging infectious diseases (EIDs) are zoonotic in origin. Each year, zoonoses are responsible for 2.5 billion cases of human illness and 2.7 million human deaths worldwide.

While zoonotic diseases have existed throughout human history, zoologist Kate Jones and her colleagues found that emerging infectious disease events between 1940 and 2004 are "dominated by zoonoses (60.3% of EIDs): the majority of these (71.8%) originate in wildlife . . . and are increasing significantly over time." Similarly, biologist Katherine Smith and her colleagues found that "the total number and diversity of [human infectious disease] outbreaks, and richness of causal diseases increased significantly since 1980." Sixty-five percent of diseases from 1980 to 2013 recorded in a dataset compiled in 2014 were zoonoses that collectively caused 56 percent of outbreaks globally (compared to 44 percent of outbreaks caused by human-specific diseases). Human activities associated with accelerated globalization include population growth, intensified farming practices, trade in domesticated and wild animals, and environmental degradation including climate change, deforestation, and habitat destruction. Those activities, in turn, have intensified the wild and domesticated animal-human interface creating increased spillover risks.

The globally interconnected drivers of zoonotic diseases, and the worldwide reach of their harms, point to the urgent need for collective action through global governance mechanisms bridging government, private industry, and civil society. To date, however, existing institutional arrangements have fallen short. But the wide-ranging, large-scale, and costly effects of the COVID-19 pandemic demonstrate the value of addressing those weaknesses in global governance.

Summary of CFR Workshop

The Council on Foreign Relations held a virtual workshop on September 28, 2022, titled "Emerging Zoonotic Diseases: Improving Global Surveillance, Prevention, and Response." The workshop brought

together global health and zoonotic disease experts with policymakers to consider the risks from emerging and reemerging zoonoses, assess existing institutional arrangements for collective action, and propose specific and actionable policy options to address identified governance gaps. The session touched upon a variety of issues, including why the increased emergence and spread of zoonotic diseases is a major concern; the main drivers of current trends; the gaps in the existing global surveillance and response systems; and new norms, rules, and frameworks of cooperation that would help close those gaps. Core takeaways from the workshop include the following:

- Governments and international institutions need to better recognize the diverse and interconnected factors driving the emergence and reemergence of zoonotic diseases, including, above all, natural habitat incursions, notably deforestation and rapid urbanization; the commercial trade in animals (farmed and wild); and human activities that amplify and spread disease risks such as environmental pollution, inappropriate use of vaccines and anti-microbials, and global population movements.
- Approaches to date have focused on secondary prevention (stopping outbreaks from growing into an epidemic or pandemic), rather than primary prevention (measures that prevent the onset of outbreaks through effective measures before the disease process begins). The latter includes regulation of human activities contributing to disease risks and reduced risk exposures. Current approaches remain partial and inadequate.
- The existing global governance architecture is characterized by this limited scope. This, in turn, has influenced efforts to advance a "One Health" approach, which brings together human, animal, and environmental health. Negotiations for a pandemic legal instrument led by WHO member states, and a Financial Intermediary Fund for Pandemic Prevention, Preparedness and Response led by the World Bank, have also been undertaken amid inadequate attention to primary prevention.

Main Challenges in the Global Governance of Emerging Zoonotic Diseases

Since the late twentieth century, broad recognition of the significant and increasing risks to human health posed by zoonotic diseases has led to numerous efforts to strengthen collective action. Those initiatives originally focused on select diseases such as rabies and HIV/AIDS, or groups of diseases such as those classified by etiologic agent (viral, bacterial, parasitic, mycotic, or unconventional [prions]). Those efforts have largely taken place within the health sector.

By the early twenty-first century, following major global disease events including SARS-CoV-1 and the H1N1 influenza pandemic, broader initiatives were launched to prevent, detect, and respond to those increasing disease threats more broadly, including zoonotic diseases. Notably, the One Health approach, coined in 1984, initiated a "continuous upward trend" in scientific activity during this period. The emergence and spread of the Middle East Respiratory Virus (MERS), Zika virus, and several outbreaks of Ebola virus, along with ongoing risks of highly pathogenic avian influenza (HPAI), mobilized high-level political support behind the Global Health Security Agenda (GHSA) launched by the U.S. Centers for Disease Control and Prevention in 2014. The GHSA included zoonotic diseases as a major component of its initial eleven "Action Packages."

The COVID-19 pandemic is further prompting a new wave of initiatives at the national and global levels including the U.S. Fish and Wildlife Service's first Zoonotic Disease Initiative "to strengthen early detection, rapid response and science-based management research to address wildlife disease outbreaks before they cross the barrier from animals to humans and become pandemics"; the International Atomic Energy

Agency's Zoonotic Disease Integrated Action initiative to support the use of nuclear science and nuclear-derived techniques for zoonotic disease surveillance and response; and the Preventing ZOonotic Disease Emergencies initiative launched by the French government in 2021 "to help coordinate a large portfolio of regional, national, and international projects and programs concerning the emergence of zoonotic infectious diseases and implement innovative methods to improve prevention and mitigate emergence risks."

Despite this growth of scientific and political commitments to addressing the growing threat of zoonotic diseases, there is a persistent gap between pledges to advance integrated action, often under the One Health banner, and effective implementation. Fragmentation, rather than integration, continues to characterize this domain. This fragmentation includes insufficient links across organizations concerned with human, animal, and environmental health; activities for disease prevention, preparedness, response, and recovery; roles and responsibilities of different levels of government; and, perhaps most challenging, the obligations of public and private sector actors.

Several global governance challenges hinder the effectiveness of existing efforts. The first is the diverse ways that emerging and reemerging zoonotic diseases are framed. Frames are defined as "persistent patterns of cognition, interpretation and presentation, of selection, emphasis and exclusion." Frames shape how "an issue is presented in such a way as to tie it into a broader set of ideas about the world, or 'socially constructed reality,' and through this gain influence and policy purchase." Where different frames compete and champion different interests, ideas, and actions, global governance can become fragmented, uncoordinated, and contested. For example, researcher Didier Wernli and his colleagues use policy frame analysis to map the many organizations concerned with the global governance of antimicrobial resistance (AMR). They conclude that the most frequent frames (health care, development, innovation, and security) each "[originate] in distinct scientific fields, [conceptualize] the main causes of AMR and [prioritize] different interventions and measurements." These differences have led to overall incoherence of goals, policies, and activities.

The global governance of emerging zoonotic diseases is similarly characterized by diverse framing. The extent to which these frames compete or cooperate for policy influence and available resources shapes the effectiveness of their collective efforts. For example, applying military analogies, the security frame largely casts zoonotic diseases as external (beyond the border) threats. This approach leads to a strong emphasis on surveillance, monitoring, and reporting (analogous to early-warning military systems), and secondary prevention or response measures for protecting domestic populations from threats originating from abroad. By contrast, a social-ecological frame focuses on the complex interactions between natural and human systems on a planetary scale. This frame supports complex systems-level thinking and primary prevention through the regulation of major drivers of emerging zoonotic diseases, such as intense farming practices, urbanization, and habitat destruction.

A second challenge is the tendency to approach the global governance of emerging zoonotic diseases as primarily a scientific, administrative, or operational matter. For instance, public health officials assumed that the main task is better coordination without acknowledging the need to effectively mediate contested values, vested interests, and divergent goals. Those political processes are either unrecognized or set aside as somehow undesirable. For example, the "principle of governance" set out in the One Health Joint Plan of Action (OH JPA) is "to build on the existing mechanisms and avoid creating unnecessary and complex structures." This is to be achieved through a Quadripartite Executive, "accountable for the implementation of the OH JPA and . . . leadership and oversight," supported by a Quadripartite Secretariat. While a shared and operationally efficient governance structure is important for bringing together the four international organizations concerned (WHO, Food and Agriculture Organization [FAO], World Organization for

Animal Health [OIE]), United Nations Environment Programme), governance is more than coordinating implementation of work plans. Not specified in the action plan are the distribution and exercise of authority, the regulatory powers of the Quadripartite, processes for priority setting, dispute resolution, transparency and accountability mechanisms, and the distribution of costs and benefits. Those ostensibly political matters lie at the heart of any global governance system.

A third and related challenge is the limited scope of activities deemed legitimate for the global governance of emerging zoonotic diseases to undertake. These emphasize secondary prevention through disease surveillance and selected measures for preparedness and response, such as diagnostics, vaccines, treatments, clinical care, and biosafety protocols. However, activities to advance primary prevention, including the need to adopt binding regulation of the private sector, is often deemed beyond the scope of scientific and technical cooperation. As researcher John Mackenzie and his colleagues argue, "there is little interest in any form of 'global governance': [One Health] is a concept or approach not an association or society." Instead, the authors support "[identifying] a body that can lead relationship development between major disciplines and foster a true transdisciplinary approach, develop global guidelines and strategies, and ensure sustainable funding is needed, probably in an advisory capacity." This approach suggests a larger resistance to granting regulatory authority over human activities that directly or indirectly contribute to increased risks of spillover events, including the role of powerful private sector interests such as the food, transport, forestry, and energy industries. The result is a continued focus on identifying and responding to zoonotic disease events but not engaging in primary prevention to stop them happening in the first place.

A fourth major challenge is the absence of an overarching global governance framework for emerging zoonotic diseases. Wernli and his colleagues describe seventy-eight organizations concerned with AMR, with twenty-one having AMR-specific activities but of limited scope, and thirty-six having AMR-sensitive activities "reflecting the wide scope of AMR." Similarly, there is a large and growing constellation of organizations concerned with zoonotic diseases across many scientific fields, countries, and policy sectors. Their varied mandates, activities, and resources have evolved over time, often as a result of soft-funded donor preferences, and collectively do not constitute a strategically designed and coherent global governance system.

Correspondingly, there are at least fifty international agreements relevant to zoonotic diseases, but no overall legal framework to govern this domain. Legal instruments also rely primarily on voluntary compliance with soft law instruments such as nonbinding standards, guidelines, and action plans. The FAO identifies legal areas relevant to One Health including sanitary and phytosanitary measures (in the trade of food and agricultural products); environmental protection; conservation and sustainable use of biodiversity; forestry, wildlife, and fisheries; and antimicrobial resistance. While advancing legislation in each of those areas remains necessary, an integrated legal framework would provide greater coherence. For example, while large-scale agriculture operations may comply with regulations laid out by the International Plant Protection Convention, the OIE, and the Codex Alimentarius Commission to control the spread of foodborne diseases, production processes (e.g., discharge of pollutants and habitat destruction) can still violate other environmental protections. Similarly, WHO administers the International Health Regulations (IHR) as a legal framework for preventing the international spread of disease. However, the IHR do not include states party commitments to address the upstream drivers of disease emergence or extend WHO authority over the activities of private sector actors.

Priority Actions to Strengthen the Global Governance of Emerging Zoonotic Diseases

Several steps can be taken to address current challenges to the global governance of emerging zoonotic diseases. First, governments and international organizations need to strategically manage the diversity of perspectives causing "gridlock" and hindering effective collective action. This management begins by mapping the main institutions, interests, and ideas shaping how emerging zoonotic disease threats, drivers, and recommended policy actions are framed. Given that multiple frames are likely to persist, incoherence could still be overcome by promoting "frame alignment." This approach argues that individual frames can be strategically aligned in congruency and complementariness to support social mobilization.

Frame alignment can be promoted through strategies such as bridging (linking two or more ideologically congruent but structurally unconnected frames), amplification (clarification and invigoration of an interpretive frame), extension (broaden boundaries of a frame to encompass interests or points of view salient to potential adherents), and transformation (change frame through nurturing new values, jettisoning old meanings or understandings, and confronting erroneous beliefs). A good example is the movement to expand access to anti-retroviral drugs for HIV/AIDS through closer aligning of the security, economic, development, and human rights frames. Researcher Justin Beall and his colleagues argue that a similar strategy can "resonate with ideologically diverse audiences" and "ultimately lead to bipartisan support for actions required to promote 'One Health' approaches that reduce the impacts of zoonoses on human and environmental health." For instance, identifying shared values that facilitate collective action (e.g., stewardship, sustainability) can form the basis of frame alignment. Similarly, there could be shared frames for integrated risk assessment involving human, animal, and environmental health. For example, the complex interactions between clinical and societal consequences of zoonotic diseases could be brought together to support increased investments in primary prevention measures.

Second, there is a need to embed political institution-building based on principles of good governance into strategies to address emerging zoonotic diseases. Rather than seeking to exclude politics as an unwelcome interference in scientific and administrative matters, which simply reduces the transparency and accountability of political processes, the task is to support the ways politics is conducted to enable relationship building across diverse and often competing interests. As Richard Wenzel writes, in relation to the resurgence of cholera in Haiti:

> A key lesson from the ongoing COVID-19 pandemic is that science alone cannot control a pandemic. Leadership is essential: decisions need to be made, trust earned, clear messaging preserved, the means of control succinctly articulated, and the public educated and inspired to act . . . . Public health and political leaders, in partnerships with other systems experts, need a renewed social contract that entails unusual cooperation, driven by empathy and social values.

To achieve this, policymakers involved with building political institutions for the global governance of emerging zoonotic diseases can learn from other domains where innovative forms of transnational risk management have brought together government, industry, and civil society interests. These include standards set for the internet, air traffic management, extractive industries, and the transnational governance of water resources.

Third, while the growth in organizations concerned with emerging zoonotic diseases is welcome, a lack of clear leadership undermines effective global governance. Almost forty years after the concept of One Health was coined, integration across the main domains remains insufficient. Efforts have focused on voluntary mechanisms, such as the One Health Global Network, to "facilitate coordination and linkages." Major international organizations are structured by sector or issue area, and financially incentivized to work in siloes. In the mid-1990s, this status quo was challenged by the formation of the Joint UN Program on HIV and AIDS to support a varied approach to the global HIV/AIDS pandemic. The urgent need for timely action on zoonotic diseases could warrant the same approach. This should include an agreed legal framework and

setting out roles and responsibilities, obligations, and enforcement mechanisms. This framework should be part of the global legal instrument for pandemic preparedness and response currently under negotiation.

The creation of a lead institution with a clear legal framework would, in turn, lead to more integrated operations. Data collection, sharing, and analysis across professions, disciplines, and sectors could be built to inform systems-level thinking and practice. A global strategic plan could set clearer priorities, enabled by innovative resource mobilization and allocation that is more sustainable, rational, and targeted. Importantly, funding should be tied to a formal obligation to invest in the global public goods necessary for pandemic preparedness and response as advocated by the Global Public Investment approach. Resources should also be allocated to correct existing inequities that sustain or worsen disease risks. As noted by researchers Peter Rabinowitz and Lisa Conti, "the majority of emerging disease arise from wildlife but the vast majority of funds are spent on understanding and controlling them in humans."

Conclusion

Although there is an encouraging increase in scientific attention and high-level political commitment to collective action on emerging zoonotic diseases, no system of global governance that enables such action currently exists. Indeed, there is no agreement on what a global governance system should be comprised of. Diverse frames compete and champion different interests, ideas, and actions. Powerful private sector interests resist stronger regulation as beyond the scope of scientific and technical cooperation. The result is a reluctance to engage in political institution-building or strengthen legal frameworks, relying instead on a multitude of initiatives, opportunities to coordinate, and voluntary compliance with soft law.

The large-scale, prolonged, and costly impacts of the COVID-19 pandemic demonstrate the limitations of this approach to date. More concerted efforts to advance global governance are now needed. Frame alignment can be explored as a strategy for identifying shared values to advance collective action across diverse public and private interests. The embedding of political institution-building into strategies to address emerging zoonotic diseases—building on transnational risk management in other domains—is also needed. In addition, the establishment of a lead institution, underpinned by a clear legal framework and appropriate resourcing, could be necessary to overcome the gridlock that continues to hinder much-needed action.