

Diseases, Borderless

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Borderless diseases refer to those infectious disease agents that exhibit considerable global mobility. In particular, the increased speed of travel, a greater degree of human migration, intensified urbanization, and increasing human encroachment on untouched natural habitats have all enhanced the potential for pathogens to spread internationally in considerably shorter periods of time. In common with other transboundary issues, such as environmental pollution, international terrorism, and the international trade in narcotic drugs, the management of infectious disease spread is challenging because programs and policies aimed at disease containment must necessarily address myriad other issues, especially those related to the ability of sovereign states to govern autonomously, border regulation, the tension between maintaining trade while protecting public health, and balancing the rights of the individual against those of the collective.

Notably, the potential for disease spread is historically specific and varies with the nature of the human and environment relationship associated with a particular time and place. Throughout history, changes in the environment–human relationship have led to the introduction of new and emerging diseases. The advent of agriculture and the introduction of small-scale livestock production 1,000 to 2,500 years ago, for example, enabled countless novel strains of pathogens to jump from domesticated herd animals to humans, and gave rise to diseases such as smallpox, measles, tuberculosis, leprosy, influenza, the common cold, malaria, dengue, and bubonic plague. The expanding Roman and Mongol empires in the first few centuries CE facilitated the spread of these diseases across the Asian and European continents, while the colonialist period of the seventeenth to nineteenth centuries represented a third major shift in disease spread

prompted by transoceanic spread via European ships. The contemporary period of globalization undoubtedly represents a fourth transitional period. Since the end of the twentieth century there have been dramatic increases in the volume and speed of human mobility (particularly by air travel), changes in food production practices (e.g., intensified livestock operations), newer medical techniques such as blood transfusions and intensified urbanization (particularly the development of megacities and global cities), and increased human encroachment on previously untouched viral and animal reservoirs. All of these have collectively increased the potential for disease spread. As such, over recent years the likelihood that a pathogen can elude local containment efforts to cause a global pandemic has increased.

Of all pathogens, flu viruses are especially adept at eluding borders. The elusive nature of flu viruses may in part be attributed to their ability to mutate rapidly to evade the human immune system response; consequently vaccinations need to be given every year to protect against recent strains of the virus. And, because the flu virus can mutate so quickly, the vaccines that are developed are rarely fully effective. As a result, the virus is able to travel around the world every winter, usually infecting up to 15 percent of the world's population. This ability of the flu virus to mutate quickly was also the reason why different strains of the COVID-19 virus (such as the Alpha, Beta, Gamma, Delta, and Omicron variants) resulted in the experience of different pandemic waves over the short span of one to two years. The potential for viral flu spread is also enhanced because the period between infection and symptom onset in humans is usually about two days, which means that unsuspecting air travelers may carry the virus to a point on the other side of the globe without any awareness that they are doing so, given that such journeys are completed in a matter of hours.

There are other significant disease threats that are nonviral in character, and these also exhibit the ability to evade borders. Prions are the most notable example. Prions are aberrant forms of animal protein that, on contact, effectively deform

the shape of normally functioning proteins. These newly deformed proteins then become prions themselves, thereby initiating a chain reaction of protein deformation that especially affect the neurons of the brain, resulting in diseases such as bovine spongiform encephalopathy (BSE) in cows, or the human variant of Creutzfeldt–Jakob disease (CJD). The infection spreads as protein-rich meat and bone meal containing prions is fed to cattle. If humans consume the infected animal they too will become infected. The borderless nature of the spread of BSE and CJD became evident in the mid-1990s, as the disease spread from Britain to other European countries and later to North America. It was clear from these experiences that the global trade in animal feed and beef for human consumption contributed to the borderless aspect of prion spread.

The ban on British beef products to halt the spread of BSE/CJD, and later the WHO travel advisory to those areas affected by severe acute respiratory syndrome (SARS) in 2003, highlights the historic tension between the interests of ensuring international trade (particularly the sovereignty of nations to engage in free trade) and the protection of public health. Indeed, the beginnings of international health governance can be traced to early efforts to deal with this type of tension. The imposition of a 40-day quarantine on the crew and cargo of ships arriving in the ports of fourteenth-century European city-states, for example, was seen as a way to stop bubonic plague and cholera from entering the port cities. These impositions, however, led to public outcry from the merchant class, who objected to the disruption of trade and commerce. Diplomatic dialogue ensued as it was realized that international cooperation was required to deal with the impasse. This in turn led to a series of International Sanitary Conferences that eventually led to the establishment of the World Health Organization (WHO) in 1948. From the outset, the WHO's dual mandate was to conduct international epidemiological surveillance and disease control and at the same time to ensure that the impact of such activities on international trade was minimal.

Central to efforts to control borderless disease threats is the need to distinguish that deemed to be dangerous from the nondangerous. Such classificatory efforts are not only directed at the international flows of foodstuffs, animals, and

cargo but also at humans. It is with reference to the latter that international public health strategies, regimes, and policies aimed at infection disease control have been informed by, and filtered through, conceptions of social control more generally. Traces of the colonial past of the global north, for example, may be seen in current international infectious disease strategies. As part of a larger colonial program, approaches to infectious disease control, whether based on the “white man’s burden” of the British, the “ethical policy” of the Dutch, or the *mission civilatrice* of the French, were very much based on the perspective of “tropical” medicine, which was concerned with the problems colonizers encountered in their distant occupations. This, coupled with the nineteenth-century version of germ theory, was consistent with the logic of invasion and occupation. In line with this thinking, individuals were classified as to whether they were from “here” or from “there,” as encountered by the colonizer. This process of othering is still evident today in various ways, including the popular association of tuberculosis with immigration from the global south to the global north, and of the spread of HIV/AIDS with Africa and Haiti, Ebola with Africa, SARS and COVID-19 with China, and the H1N1 (swine flu) virus with Mexico. Other indications of the continued relevance of the othering process through classificatory schemes is indicated by the fact that a central and explicit preoccupation in influenza preparedness plans concerns the identification of air travelers as a special group in need of careful surveillance and regulation, with thermal scanning and other disease screening measures being implemented at international airports. More recently, the classificatory orientation has also been seen in terms of the prioritization and ranking of groups with respect to who should have preference for receiving the Influenza A subtype H1N1 vaccine, as well with reference to the stigmatization of those who have the disease (such as the racialization of SARS and COVID-19 as “Chinese” diseases within the Western context). The impact of colonization and othering is also seen in the case of COVID-19 vaccine hoarding by the global north, which left the global south dramatically undersupplied during the pandemic.

The social control and subsequent securitization of the flows involving individuals and

pathogens are predicated on surveillance measures, which in turn are based on classification categories that make implicit use of boundaries. This includes, for example, the demarcation of territory and social groups. With the adoption of category-based surveillance, security interests define who is or is not allowed to cross the boundary. With borderless diseases, the ability to adopt strategies of surveillance and impose restrictions on movement becomes complicated for a number of political and social reasons. First, under neoliberal policies that promote privatized free trade, allowance must be made for the unobstructed flow of goods and people, while at the same time disallowing infectious diseases that will ultimately disrupt global commerce. Such policies are buttressed by increasing neoliberal trends promoting deregulation, thus enhancing the potential for pandemic spread. Second, issues related to the potential violation of legal rights to individual privacy, patient confidentiality, and free association must be considered to develop a politically palatable surveillance policy. Third, for some diseases such as HIV/AIDS, the chance of contracting the disease does not depend as much on national identity or regional location as much as the extent to which the individual belongs to a particular network of mobilities. In light of such circumstances, it no longer makes sense to think of combating infectious diseases in terms of nation-states with fixed boundaries. If the nation-state container approach to infectious disease response is retained, economic disparities, geopolitical fragmentation, and unilateralism will continue to obstruct the co-operative partnerships required to form the necessary global organization to combat borderless diseases – especially in light of advances in digital technologies. As a result largely of advanced communication and information technologies, such as those based on the Internet, as seen with SARS in 2003 and COVID-19 in 2019, scientists from around the world, in an unprecedented move, temporarily put aside competitive aspirations to share surveillance, epidemiological, and clinical data in real time to identify and characterize the causative agents of the respective diseases within weeks, as opposed to the months it would have taken previously. Furthermore, the WHO collected data through surveillance systems that surveyed nongovernmental channels

such as emails, Internet chat rooms, and local media outlets, unofficial sources that would not have been accessed previously.

Two significant disease spread incidents illustrate the changing nature of the borderless disease phenomenon – the 2013–2016 Ebola epidemic in West Africa and the ongoing global COVID-19 pandemic, which began in December 2019 in Wuhan, China. The spread of Ebola through the bordering West African nations of Guinea, Sierra Leone, and Liberia was notable not only because it was the largest recorded outbreak of this disease (with over 11,000 casualties), but also because all previous Ebola outbreaks had been limited to relatively isolated rural sites, which enabled containment and limited its spread. In stark contrast, the spread of Ebola in 2013–2016 was not limited to rural locations but quickly spread to larger regional urban centers in neighboring countries. The Ebola epidemic was hence much more influenced by the conditions of intensified urbanization, which were unfolding on the continent more generally and in the West African region more specifically, including the deepening of urban poverty, high population density, and, most importantly, the proliferation and expansion of informal settlement areas. In this context, the spatial and temporal diffusion of Ebola highlighted the increased importance of rural–urban connections, as well as of networked connections between urban centers located in different countries, in facilitating disease spread. Public health efforts to contain Ebola to particular West African nation-states, as well to adopt effective disease surveillance and monitoring activities such as case identification and contact tracing, faced challenges because of the presence of long-established and historically based networks of informal footpaths that joined villages and markets in neighboring countries. Such informal travel pathways facilitated the evasion of formal border check points.

The spread of Ebola occurred in a particular direction and along a traceable social gradient. Originating from largely rural poor village locations, the virus soon became established in poverty-stricken informal settlement areas located within or on the peripheries of urban centers. As some residents from informal settlements travelled to wealthier neighborhoods to pursue work in various capacities such as

gardening, housekeeping, child and elderly care, security, driving, cooking, and so on, Ebola spread to their more affluent employers. With reference to COVID-19 however, the direction was reversed, interestingly. The affluent employer was more likely to contract the disease through international travel (for business, politics, education, and so on) and would then infect their domestic employees, who would take the virus back with them to the informal settlements.

The COVID-19 pandemic is exemplary of the borderless disease phenomenon and the social and political responses that may ensue. Most notably, the pandemic could be viewed as a sociological breaching experiment in which normally routine and expected ways of social life become disrupted. In the process, latent social problems and issues that were normally ignored were revealed and came under increased public and political scrutiny. In the North American context, a myriad of such issues rose to prominence as the pandemic unfolded. These included increased attention paid to such issues as the role of social media in misinformation and disinformation and how this impacted public trust in various institutions and actors (e.g., science, government, journalism, public health officials, social movement actors, elites, and so on); the restructuring of work as mediated by digital technologies; and issues related to a wide range of structural matters pertaining to the differential impacts of the pandemic and the differential ability of different groups to protect themselves from the COVID-19 virus. Structural issues that garnered increased attention during the pandemic included, for instance, the plight of previously neglected and socially marginalized subgroups (e.g., racial minorities including black and First Nations peoples, migrant workers, “essential” workers, the elderly in long-term facilities, those in abusive relationships) and issues related to a wider range of structural matters involving housing inequality, basic income, the digital

divide, inequalities in vaccine distribution in relation to preferential access by certain groups within a given society and between those of the global north in comparison to the global south, and so on. Whether the pandemic and other borderless disease situations will contribute to a reflexive moment that prompts more enduring and broader institutional changes, or at least works to help ensure that these types of previously latent structural problems remain on the policy agenda, is something that is still open to question. What is perhaps more certain, however, is that infectious disease outbreaks and pandemics are likely to remain as significant problems in the near and long-term future as changes to the physical environment brought on by global climate change, coupled with large-scale social and cultural changes associated with globalization, lead to constantly changing relationships and interactions of people and viruses, thus increasing the opportunities for borderless diseases to spread.

SEE ALSO: Boundaries (Racial/Ethnic); Health Behavior; Health and Culture; Health and Medicine; Health and Race; Health and Social Class; HIV/AIDS and Population; Mobility, Measuring the Effects of; Mobility Systems; Spaces of Flows/Spaces of Places

Further Readings

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