CHAPTER 53

Infectious Disease, Environmental Change, and Social Control

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Introduction

Throughout history, significant changes in the character and types of relationships that human beings have had with nature—particularly animals and the wilderness—have led to changes in the development and spread of infectious diseases. McMichael (2001) outlines how, for instance, a change 10,000 years ago in settlement patterns from nomadic hunting and gathering to settled agrarian-village living enabled countless strains of bacteria and viruses to jump from domesticated herd animals and rodents to relatively stationary human beings. Indeed, many existing infectious diseases that affect human beings today, including smallpox, measles, tuberculosis, leprosy, influenza, the common cold, malaria, dengue fever, and the bubonic plague, can be traced to this historic period of transition. Subsequently, other changes such as an increase in trade, travel, and military movements via the great powers of the Roman Empire and China, beginning around 2000 years ago, and the expansion of colonialism during the seventeenth to nineteenth centuries, led to further changes in the patterns of infectious disease spread. McMichael (2001) speculates that we may be entering a fourth transitional period in the ever-changing environment–human relationship—a new epoch informed by globalization.

Some significant evidence supports this claim. Consider the fact that over the last quarter-century, the world has witnessed an unprecedented number of 'new and (re) emerging' diseases. Examples of these abound: HIV/AIDS, **severe acute respiratory syndrome** (SARS), *E. coli* 0157:H7, *Clostridium difficile*, West Nile virus, Lyme disease, antibiotic-resistant tuberculosis, the Ebola virus, and avian influenza (Levy and Fishchetti, 2003; Nikiforuk, 2006). In what follows, I briefly explore various aspects of the hypothesized relationship between globalization and infectious disease emergence by broadening the focus of discussion to consider the implications of globalization, and the associated developments of urbanization, neo-liberalization, and post-9/11 securitization, for understanding new and emerging diseases.

Globalization

Held et al. (2002), conceptualize globalization as the general transformations involved in the organization of human affairs that occur because of, and through, the linking together and expansion of human activity across regions and continents. In these terms, the international spread of infectious diseases such as SARS or influenza A/H1N1 is clearly a globalized phenomenon in several respects. First, it can be noted the networks of social contacts involved in the spatial diffusion of these diseases were quite extensive, involving long and extended chains of transmission connecting southern China to Toronto, or Mexico City to northern Canada (with reference to the SARS and influenza A/H1N1, respectively). At the same time, the intensity and velocity of the globalized flows of infectious disease were critically involved in the spread of these diseases, with the increased volume of passenger flow, coupled with

the increased speed of jet travel, effectively heightening the risk of global infection. Furthermore, with globalization, the number of opportunities for the global spread of disease multiply. In the past, if the crossover to human beings of the SARS coronavirus from the civet cat, or influenza A/H1N1 virus from the pig, occured in some remote location, this would result only in a localized and contained outbreak in an isolated village—an event that would ultimately burn itself out and prevent the diseases from spreading beyond the confines of that locale. Today, however, because of globalized connectivity, such protective insularity and isolation no longer exist to the extent they once did, and an outbreak of a disease in a remote area is more likely to spread to more populated areas and therefore have a much greater potential for global impacts (Ali and Keil, 2008).

Urbanization, the Built Environment, and Infectious Disease

The United Nations (2007) has noted that, as of the year 2008, more than half of the world's population will live in cities. This development has important implications for the spread of infectious diseases. With their large number of people and crowded conditions, cities are well suited to the survival needs of pathogens. Furthermore, the physical environment of cities, including their infrastructure and transportation patterns, serve to open up new avenues for spatial diffusion and proliferation. In a sense, due to the very nature of their built infrastructure, cities are consciously constructed as both internally and externally connected entities, and it is this connectedness that makes human beings vulnerable to infectious disease spread. This built environment influence was seen in at least a couple of ways with respect to the 2003 multi-nation SARS epidemic. First, a community outbreak among 300 residents of the Amoy Gardens apartment complex in Hong Kong was found to have occurred because of transmission of the virus through a vertical sewage pipe that connected the washrooms, positioned one atop the other (Ng, 2008). Second, the international spread of SARS was clearly dependent on air travel, thereby implicating the built infrastructure of airports as connecting hubs (Ali and Keil, 2010). Notably, the spread of SARS illustrated how the location of major hubs in certain types of cities—that is, what are referred to as 'global cities'—was instrumental in spreading the disease through the global network of connections between Hong Kong, Toronto, and Singapore (Ali and Keil, 2006).

Neo-liberalization and Infectious Disease Flow

Toward the goal of completely eliminating state intervention in the provision of goods and services (i.e., the economy), neo-liberal policies and activities often promote the privatization of state functions, including the outsourcing and downloading of state functions to private agencies and the elimination of environmental, industrial, trade, and health regulations viewed as costly barriers to privatized profit maximization. Although these are all matters of a political nature that seem distant from the types of issues related to disease flows, neo-liberalization has in fact had a significant impact on infectious disease flows by influencing the health and economic policies and regulations that ultimately channel these flows through the environment. An example will help illustrate this point.

In the summer of 2000, the town of Walkerton, Ontario, experienced an outbreak of *E. coli* 0157:H7 that was causally related to the Ontario government's neo-liberal policy, known at the time as the 'Common Sense Revolution' (Ali, 2004). The outbreak event, resulting from the contamination of drinking water by the bacteria, notably occurred at a time when drinking water management in the province was being deregulated and privatized. As a consequence of such systemic changes, the provincial government agencies and laboratories that were responsible for the testing of samples from municipal drinking water supplies were being downsized and subject to heavy staff cuts. These government services had in fact just been privatized at the time of the outbreak, and

rural municipalities such as Walkerton—with a sparse population and therefore a weak tax revenue base—simply could not afford the costs of regular privatized water testing (a monitoring function previously performed by the provincial government). In part as a consequence of these developments, the contamination of the drinking water was not detected in a timely fashion, and even when detected, efforts to curb the flow of the pathogen were hindered by a lack of resources resulting from budget and staff cuts.

Securitization and Infectious Disease Flow

Social control has always been an important aspect of the state's approach to dealing with infectious disease, and this is clearly seen in the case of the 2003 SARS epidemic with regard to the adoption of contact tracing–based social distancing methods (i.e., quarantine and isolation) by state-run public health agencies. Social control however, has also led to tension with other governance functions with which the state is involved—primarily, the maintenance of continued economic growth. That such tension still persists today is evidenced by the fact that travel advisories were issued by the World Health Organization—warning travellers not to travel to SARS-affected areas such as Toronto. Such advisories were politically contentious and were met with disapproval by Canadian officials who feared severe economic consequences to the hospitality, tourism, and other sectors of its domestic economy. Security from public health threats has increasingly been recognized as a precondition for the stabilization of economic activity, and in this light security measures may be somewhat grudgingly tolerated by state actors. This toleration of security measures may have intensified to an all-encompassing embrace after the events of September 11, 2001, as a newly renewed emphasis on issues of surveillance, vigilance, and security now play a prominent role in an environment of crisis politics sometimes referred to as the 'new normal' (Hooker and Ali, 2009). Within this world view, public health and terrorism issues become conflated under the mantle of 'national security'. The explicit reframing of public health as a security issue may be seen, for example, in a report developed for the U.S. Central Intelligence Agency that framed the possibility of new infectious diseases as a threat to the nation (CIA, 2003) or in the fact that public health emergencies figure prominently in Canada's first national security policy (Van Wagner, 2008). Furthermore, it has been noted that in the post-9/11 era, a focus on bioterror and infectious diseases as security threats has led to a renewed interest in traditional social control measures associated with national security, such as border control and intelligence capabilities (King, 2002). Examples of the adoption of such measures can be seen in the national and international response to the spread of SARS.

A notable example of this emphasis on enhanced surveillance is evident in the recommendation of the World Health Organization that airports in SARS-affected areas adopt certain monitoring practices, including temperature screening of departing and transiting passengers, the provision of information leaflets to travellers, exit questioning, and the completion of a mandatory health declaration form by passengers (Ali and Keil, 2010).

Conclusion

Over the last quarter century, as globalization has intensified, significant changes have occurred that have had important implications for the genesis and spread of infectious diseases as well as the response to these developments. 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 very short periods of time. Furthermore, interactions of these developments with other contemporary dimensions of societal change, such as neo-liberalization and securitization, have contributed to a situation of enhanced vulnerability to disease spread as new opportunities and pathways are opened up in response to these interactions.

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CHAPTER 54

Does a Place Like This Still Matter? Remaking Economic Identity in Post-Resource Communities

Nathan Young

Introduction

The images of rural Canada that most of us grew up with have largely faded into history. For example, the past 35 years have witnessed a steep decline in small-scale family farming, as the economics of agriculture in a globalized world have privileged large, industrialized farms with lower costs per unit of production. The same trend can be observed in resource industries such as fisheries, in which the increasing costs of licences and equipment are driving out smaller operators and processors. In short, rural Canada is in the midst of profound changes, one result of which is that many traditional industries no longer employ the numbers they once did.