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Travel in an Era of Transnational Health Threats and Global Health Governance

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In early April 2009, Mexican authorities reported a highly unusual increase in severe pneumonia among young adults. Days later, laboratory reports confirmed that the atypical cluster was the result of a novel strain of swine-origin influenza A virus (H1N1). Within weeks, the virus spread to 62 countries, infected more than 17,410 individuals, and contributed to 115 deaths, marking the first global flu pandemic in over 4 decades [1]. In the United States, all 50 states had reported 10,053 confirmed and probable cases by early June [2].

The World Health Organization (WHO) has developed a 6-phase categorization scheme to describe the nature and scope of an infectious disease threat. Phase 5 indicates that there is human-to-human spread of a virus in at least two countries in one WHO region. If the virus spreads to another country in a different WHO region, the spread constitutes a global pandemic. In early June, the WHO declared that the pandemic alert remained at phase 5 [3]. Though the severity of the disease has been relatively mild, particular trends reveal a familiar theme with prior epidemics: the spread of disease by travelers.

Today's travelers are protected from the health threats by scientific advancements, ease of mobility, and international law that all facilitate health-related interventions. Nonetheless, infectious diseases continue to expose the inability of health systems and governments worldwide to prevent transmissibility and treat affected populations adequately. In an era of transnational health threats, travelers find themselves in the midst of a complex framework of public health, legal, and ethical considerations.

What national restrictions are often imposed on travelers in response to international health threats? How do state responses to threats posed by airborne diseases differ from their responses to nonairborne infectious diseases such as HIV/AIDS? Finally, does international law foster collaboration among nations to mitigate public health threats? This article explores these issues against a backdrop of emerging and re-emerging infectious diseases.

Social Distancing and Discrimination

Migration now occurs at an unprecedented rate. The World Tourism Organization estimates more than 900 million international tourist arrivals in 2008, and the International Organization for Migration found that 192 million people live outside

of their country of birth [4, 5]. As a result, there is an increased likelihood of travelers exposing, or being exposed to health risks worldwide.

Historically, social distancing and discrimination went hand in hand to counter the threat of infectious diseases. Involuntary isolation and quarantine of individuals was commonplace during epidemics of small pox and cholera. Moreover, when a particular group was disproportionately affected by an ailment, there was a tendency to associate the disease with the individuals on account of their race, ethnicity, or socioeconomic status. In 1892, Eastern European Jewish immigrants to New York City were quarantined to curb the spread of typhus and protect the public's health. As a result, the number of cases and fatalities decreased, and the health department was applauded for its efforts [6]. Nonetheless, the measures could hardly be considered successful in light of "violated civil liberties, cultural insensitivities, inadequate financial or physical resources devoted to their medical care, and the macabre fate of quarantine and possible death" [6]. Between February 12 and April 1, 1892, more than 1,150 of 1,200 people (95.8 percent) who were quarantined were healthy individuals who had the bad luck of living near the original *Massilia* passengers arriving from abroad who developed typhus [7].

While advancements in science and technology should inform a collective approach to curb disease transmission, fear and stigmatization often flow from an inability to control public health threats as they unfold. Fear of the "other" is not restricted to carriers of airborne pathogens and, at times, is codified into law. As of 2008, for example, 74 countries had some form of HIV-specific travel restriction. In fact, 12 countries—including the United States—had travel bans preventing HIV-positive people from admission. Under the Immigration and Nationality Act (INA), the U.S. government may deny a visa for admission to any traveler who has a communicable disease of public health significance, including HIV/AIDS [8].

Mexicans have felt the stigmatization of swine flu worldwide. In recent days, some U.S. groups favoring restrictions on Mexican immigration have labeled the H1N1 virus "the Mexican flu." Radio commentators in Mexico lashed back, dubbing it the "California flu," alluding to two children who were diagnosed with swine flu in California in mid-April [9]. Mexican consular officials alleged that Chinese authorities have unfairly quarantined dozens of healthy Mexicans in hotels and hospitals [9].

The curtailment of individual rights during a quarantine is often, but not always, tempered by explicit legal safeguards. In the United States, for example, emergency laws contain due-process clauses that provide individuals with a right to a notice and hearing. Moreover, in some states (e.g., Pennsylvania), implementing an involuntary quarantine requires a subsequent judicial determination on the merits within 72 hours after the order is issued [10]. Worldwide, governments in Australia, the United Kingdom, and the United States have quarantined individuals with swine flu [11-13]. To date, however, it appears that most measures have been implemented voluntarily upon a physician's recommendation without any need to resort to a court order.

National and International Restrictions on Travel

Given the frequency of air travel worldwide, travelers may be particularly affected. In China, 130 passengers aboard a flight that included an individual diagnosed with swine flu were quarantined during the Spring 2009 pandemic [14]. The heightened role of travelers in transmitting diseases is also recognized within the revised International Health Regulations (IHR), which require governments to afford protections for individuals who are isolated or quarantined. The IHR require that travelers be provided food, water, accommodations, clothing, baggage protection, medical treatment, and means of communication, and quarantine arrangements must also take into account gender, sociocultural, ethnic, and religious concerns [15].

At present, 194 countries are parties to the IHR and, following its enforcement (June 2007), have a 5-year window to bring themselves into compliance with their legal obligations. While there have not been reports of gross civil-liberty violations, having adequate legal safeguards in place and available is essential. Toward that end, the WHO has created a toolkit for implementing the treaty within national legislation [16]. In May 2008, the World Health Assembly passed a resolution requiring states to report annually on their progress in complying with IHR policies, with initial reports to be submitted to the 63rd session of the World Health Assembly (i.e., in 2010) [17].

In summer 2008, the U.S. Congress enacted the U.S. Global Leadership Against HIV/AIDS, Tuberculosis and Malaria Reauthorization Act of 2008, which authorized the INA to remove HIV/AIDS from the list of communicable diseases of public health significance [18]. President George W. Bush then signed the legislation into law. The Department of Health and Human Services, however, has not removed HIV infection from its lists of communicable diseases of public health significance [19]. In December 2008, the Department of Homeland Security (DHS) issued a final rule providing a more streamlined process for visitors infected with HIV to enter the United States on temporary visas for up to 30 days [20].

From a public health perspective, a temporal restriction on the duration of travel is neither an adequate nor sufficient mitigation strategy to curb the spread of an STD. Containment is a function of behavioral prophylaxis that is, by and large, dependent on the conduct of individuals with the condition who engage in sexual relations. By contrast, an airborne pathogen poses an imminent threat to anyone within physical proximity, personal hygiene, and behavior notwithstanding. The asymptomatic nature of some diseases, coupled with long incubation periods (e.g., up to 7 days for swine flu) would enable numerous infected but asymptomatic persons to cross borders without detection.

Supplementing Restrictions with Mass Education

In practice, education is the quintessential component of all public health interventions. Without education and social distancing, implementing air-travel restrictions can worsen regional epidemics by not curtailing spread of the disease

before the high epidemic season [21]. Choosing between exporting an illness or pushing it into higher epidemic season in one region may be a false choice.

Although there is no consensus on the correlation between travel restrictions and the actual spread of disease, there appears to be a general recognition that travel restrictions would only delay, rather than eliminate, its introduction. The cost of simultaneously implementing reasonable travel restrictions (e.g., monitoring, surveillance, medical screenings) *and* encouraging behavioral prophylaxis is minimal and enhancing awareness through media outlets and community outreach stands as a determining factor in both protecting and promoting population health. Interventions that serve this dual function are more likely to curb transmission by garnering public trust and compliance by recognizing the concerns of affected and at-risk populations.

An informed traveler is a more likely ally in reducing the incidence of disease than a border-patrol agent. Without a vaccine, behavioral prophylaxis remains the most effective preventive measure. For influenza, this entails personal hygiene and social distancing. Similarly, engaging in safe sexual practices and restricting the number of partners reduces the likelihood of contracting HIV/AIDS. Scarce resources should be directed at the broader behavioral and systemic problems inherent in public health infrastructures.

Public awareness of the available resources at a final destination is also necessary to assess the risks that travelers present, and their concomitant health needs. Consider the traveler infected with HIV. In the mid-1990s, highly active antiretroviral therapy (HAART) became the standard of care for HIV-positive individuals. In industrialized countries, the result was decreased hospitalizations and mortalities, thereby transforming HIV infection into a chronic condition [22]. Yet many developing countries lack the resources and medications to implement and support HAART. Thus, travelers to developing nations in particular may experience shortcomings in hygienic conditions that increase their exposure to, and transmissibility of, other infectious pathogens and concomitant conditions [22].

Engaging travelers to be cognizant of their own health needs, behavioral risks, and the resources within the host country's health system also promotes greater transparency in assessing existing health threats. Mahto et al. found that the majority of people with HIV travel from the United Kingdom to the United States *without* a waiver visa and that 11.6 percent of them stop taking medications upon travel—most likely out of fear that baggage searches will unveil their medications and subject them to harassment or return to their native land [23]. Despite the United Kingdom's and the United States' being developed nations, the stigmatization that attaches to HIV infection compels many to evade the law and put their own health at risk. Against this backdrop, existent social and legal landscapes are only propagating the fears that aggravate—rather than ameliorate—the burden of disease on individuals and the population at large.

The Role of International Law

While treaties abound to promote health generally, it is unclear whether international law is effective in fostering collaboration. Mintz and Guerrant recently attributed the scourge of cholera in Africa to a lack of commitment by the global community to equity and social justice [24]. While these values are noble, they simply do not reflect the current objectives of global health governance. The law is heavily skewed toward treatment modalities and offers limited accountability for resource mobilization. Sadly, public health needs of individual nations do not create the urgent call to action when its impact is limited to the affected country. Consider the plight of 2.5 million children who die annually from diarrheal diseases, or 3,000 African children who die daily from malaria [25]. Governments willingly undertake resource commitments to secure human rights during health interventions, but they do not extend their financial obligations beyond their immediate borders.

The International Health Regulations grant discretion for the interstate provision of financial resources and technical support [26]. Notably, its concomitant aim is to prevent unnecessary interference with traffic and trade. The Convention on the Rights of Children also illustrates the impact of infectious diseases on vulnerable populations, yet creates vague standards for international collaboration and assistance [27]. Similarly, the International Covenant on Economic, Social, and Cultural Rights measures success by progress based on the affected country's resources [28]. Apparently, the severity and pervasiveness of an ailment—potentially affecting 2 billion persons worldwide in the case of swine flu—may be the determining factors in garnering the political will to devote resources beyond a country's immediate borders [29].

Conclusion

When physicians cannot cure, the impetus for protecting against the “other” takes on tones reminiscent of earlier eras that treated travelers as vectors rather than victims and as things rather than people. Despite over a century of scientific knowledge and experience with prior epidemics, our attitudes—exemplified in our practices and codified in our domestic and international laws—believe the “spirit of brotherhood” that was penned in the opening article of the Universal Declaration of Human Rights [30]. It took the atrocities of World War II and the Holocaust for the international community to join together and embrace this vision of universal prerogatives. We ought to revert to these shared values to meet the present threats to our collective health and that of our posterity. For in the borderless world of global health, we are all travelers.

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