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## HEALTH CRISES AND MIGRATION

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### Introduction

In contrast to almost every other crisis and case considered in this volume, this chapter demonstrates that on the whole health crises do not result in mass migration. Focusing on infectious diseases, the chapter shows that when people move as a result of such health crises, they tend to move over short distances and for relatively short periods of time, and often because of misunderstandings and panic. Where cross-border movements have taken place, it is often difficult to discern health from other factors such as poverty and state collapse as an explanation. International Health Regulations (IHR) contribute instead to an orderly and collective public health response that generally precludes the need for large-scale cross-border movements. Although restricting population movement is a largely ineffective way of containing disease, migration policies worldwide tend still to be predicated on the risk of international migration where health crises emerge, for example focusing on isolation and non-admission for nationals of affected countries.

### The emergence of an international regime for disease control

The emergence and spread of disease has been a concern since the early days of organized society. The Bible, in Leviticus 13–14, describes the isolation and decontamination rituals of infected individuals. This concept of isolation shifted from individuals to populations in response to the threat of large-scale mortality, during the plague pandemic in fourteenth-century Europe. One of the earliest recorded government health policies was to isolate communities affected by disease and restrict population movement in response to the threat of a health crisis, for example through the quarantine law put in place in several Mediterranean port

cities in the fourteenth and fifteenth centuries. By the late eighteenth century these principles became firmly embedded in the doctrine of isolation and restriction, and had become the norm at international borders, sometimes with a highly disruptive outcome.

The beginning of international governance for infectious diseases was marked by the 1851 international sanitary conference held in Paris, focusing primarily on governance around the importation and exportation of cholera, plague, smallpox and yellow fever. By the mid-twentieth century, a further sixteen International Sanitary Conventions focusing on the same diseases had been held (Aginam 2002) and produced a variety of treaties on topics such as pilgrimage to Mecca, notification procedures for infectious diseases and the inspection of ships. These treaties were not always enforced (Aginam 2002).

The beginning of the twentieth century also saw the emergence of international health organizations, culminating with the creation of the World Health Organization (WHO) in 1948, with a mandate to facilitate international cooperation on matters related to the spread of infectious disease, as well as responsibility for international disease surveillance. In 1951, WHO adopted the International Sanitary Regulations (ISR), which superseded the treaties adopted by the successive sanitary conventions, but continued to focus on four diseases: cholera, yellow fever, plague and smallpox.

The ISR became the IHR in 1969, and had as a goal: maximum prevention of the spread of infectious diseases with minimal disruption of travel and trade. Initially the IHR remained focused on four specific diseases (cholera, plague, yellow fever and smallpox). The IHR were largely based on the assumption that there was a narrow spectrum of diseases that caused a threat to international travel and trade, that migration was unidirectional, and that these diseases could be stopped at international borders (Gushulak and MacPherson 2010).

In 1995 WHO acknowledged that countries did not often report these four diseases because of the risk of decreased travel and trade, and that it did not have a mandate to enforce the reporting requirement. The IHR disease coverage was furthermore too limited: diseases causing high mortality or spreading rapidly, such as Ebola and Marburg hemorrhagic fevers, severe acute respiratory syndrome (SARS) or pandemic influenza, did not require notification. WHO also pointed out that these diseases could not effectively be stopped at international borders because travelers could cross borders while in the asymptomatic incubation period for the disease they carried, and thus appear healthy.

Two further concerns clearly illustrated the need for a paradigm shift in the IHR and global infectious disease control governance. The first was the speed of international travel. The second was the lack of a functional network allowing rapid communication between member states: political boundaries and border posts had gradually become a less important component in the global control of infectious diseases (Davies 2010).

The IHR were eventually revised by the World Health Assembly in 2005 (WHO 2005) and came into operation in 2007. The revised IHR have moved

away from specific diseases, and focus on “public health events of international concern” (PHEICs), with the same aim of maximizing control of disease spread while minimizing travel and trade restrictions. PHEICs are not limited to infectious diseases and include contaminated food, chemical contamination of products or the environment, release of radio nuclear material, or other toxic release. The IHR are thus flexible, and adaptable to future, unknown threats (Edelstein 2012).

The revised IHR moved toward a preventive approach to international spread of disease that emphasizes the importance of detection and containment at source, and have a requirement that all countries develop core public health capacity to detect, report and respond to PHEICs where and when they occur (Wilson, von Tigerstrom and McDougall 2008).

The revised IHR take a stepwise approach to managing PHEICs, from monitoring events at the national level to global response. The revised IHR contain no formal enforcement mechanism or penalty for failing to comply with recommendations and there are no sanctions against states for non-compliance with binding resolutions (Fischer, Kornblet and Katz 2011). Despite their adherence to the IHR, countries remain sovereign and sometimes revert to the doctrine of isolation and restriction, threatening or deciding to close borders or impose travel restrictions in an attempt to prevent infections from entering their territory. During the H1N1 pandemic, for example, several countries, such as Slovakia (Gurniak 2009) and China (Huang 2010), imposed travel restrictions, in spite of repeated WHO statements that such restrictions were not recommended.

## Case studies

### *Migration and cholera: Zimbabwe, 2008–2009*

Zimbabwe has been considered by some writers a failed state, which saw a gradual collapse of the public health system in the ten years preceding one of the largest outbreaks of cholera ever recorded (WHO 2009a). The years leading to the outbreak in Zimbabwe had seen key health personnel leaving the country and, at the time of the outbreak, the main hospitals in the country had closed, as well as the Medical University of Zimbabwe and many local hospitals and clinics, resulting in ordinary Zimbabweans being unable to access healthcare (Amnesty International 2009). In addition to a health system collapse, a breakdown in the distribution of clean water contributed heavily to the emergence of cholera in Harare.

Although the initial outbreak in August 2008 was rapidly controlled, more infections were reported in the following months. By December, there had been more than 16,000 cases, with 15 percent of cases dying of the illness—a very high proportion. The infection was spreading rapidly in a population already affected by hunger and a high prevalence of HIV/AIDS (MSF 2009). By December 2008, all ten provinces had reported cases, with further spread in South Africa, Mozambique, Botswana and Zambia. Although the Ministry of Health declared an emergency on December 3, there was no formal notification via the IHR framework.

The health crisis contributed to a large-scale population movement out of Zimbabwe into South Africa (MSF 2009). By January 2009, before the outbreak had reached its peak, an estimated 38,000 Zimbabweans had fled into South Africa as a result of the outbreak, with some migration to Botswana as well.

From July 2008 the South African Department of Home Affairs had established an office to process Zimbabwean asylum claims at the “showground” in the border town of Musina, a refugee camp in a large open space where thousands of Zimbabweans were living in precarious conditions (MSF 2009). The South African government, however, considered most Zimbabwean immigrants to be economic migrants not eligible for refugee status, and was therefore deporting large numbers of Zimbabweans before, during and after the cholera outbreak (UNHCR 2009).

The South African government responded to the acute health emergency by providing clean water and medical facilities at the border. An outbreak control team was dispatched locally, as well as additional medical personnel (Hogan 2008). Water samples from the Limpopo River were taken regularly and an emergency preparedness plan was put in place (Hogan 2008). Non-governmental organizations (NGOs) such as Médecins Sans Frontières (MSF) also organized mobile clinics at the border area (Hogan 2008). In early March 2009, however, the South African government decided to close its Musina reception office and ordered Zimbabweans to clear the area, taking down and burning all temporary shelters, leading many recent immigrants to flee into hiding for fear of deportation or arrest (MSF 2009).

Other bordering countries also reacted to the cholera outbreak: Mozambique sent outbreak control teams to border areas, Zambia screened individuals entering from Zimbabwe at its border posts and Botswana dispatched outbreak management teams to the border town of Matsiloje (Berger 2008). No border countries closed their borders. A WHO statement from December 2008 clarified that “WHO does not recommend any special restrictions to travel or trade to or from affected areas” (WHO 2008, no page). Neighboring countries were however encouraged to “strengthen their active surveillance and preparedness systems” (WHO 2008, no page).

The United States government issued a travel warning for Zimbabwe in December 2008, citing the cholera outbreak among other security reasons (US Department of State 2008). The warning was lifted in April 2009. By June 2009, the outbreak was coming to an end, the number of cases reported having dropped from 8,000 a week in February 2009 to one-hundred a week in May of the same year (WHO 2009a). By the end of the outbreak, in June 2009, there had been 98,424 suspected cases in Zimbabwe, including 4,276 deaths (WHO 2009a), with an additional 12,000 cases and fifty-nine deaths in South Africa (AFP 2009).

The precise impact of the outbreak on migration from Zimbabwe into South Africa and Botswana is hard to estimate due to a high level of background migration, with thousands of Zimbabweans crossing every day. Attribution of mass migration to this medical emergency alone is therefore not possible. Similarly,

distinguishing deportation as a regular element of managing migration from safeguarding against return to situations of health crises can be hard to implement in practice.

### ***The SARS outbreak, 2003***

SARS was a new viral infection that caused respiratory symptoms and was associated with a very high mortality. Available evidence suggests that SARS emerged in Guangdong Province, southern China in November 2002. In February 2003, a physician incubating SARS traveled from Guangdong Province to Hong Kong, and stayed at a hotel where he infected several other guests, who became ill and transmitted the disease to others when they returned to Vietnam, Singapore, Canada and Taiwan (Tsang *et al.* 2003), starting a worldwide outbreak of more than 8,000 cases and 800 deaths in thirty-two countries. Although local public health officials started reporting a new illness to superiors in Guangdong as early as December 2002, Guangdong health officials did not make a public announcement about the disease until February 2003. A coordinated and effective campaign to combat SARS in China began in mid-April (Brahmbhatt and Dutta 2008).

The first recorded case in Beijing occurred on March 5, 2003. By the end of April, 1,000 cases had been reported in the city (Brahmbhatt and Dutta 2008), leading to mass attempts to flee the city. Up to one million people had left by April 26 (Pomfret 2003). Earlier on, on March 15, WHO issued a rare emergency travel advisory that urged people not to travel if they developed symptoms. The advisory also included guidance to airlines and airline crew (WHO 2003). On March 27, WHO issued more stringent advice to international travelers and airlines, including recommendations on screening travelers at certain airports. Some airlines in affected countries began screening departing international travelers (WHO 2003). The global progression of the SARS epidemic, particularly in South East Asia and in Canada, led national governments to put exceptional containment measures in place. In Taiwan, from March 18, anyone who came into contact with a SARS patient was quarantined for ten to fourteen days, either at home or in a healthcare facility, depending on the degree of exposure (CDC 2003). Quarantined individuals were not allowed to leave the quarantine sites unless authorized by the local authority. On April 28, the quarantine was extended to anyone arriving by air from a WHO-designated SARS affected area, who had to be isolated for ten days. By the end of the epidemic, approximately 130,000 persons had been placed in quarantine in Taiwan. The Taiwanese government also screened all persons entering public buildings and restaurants for fever and required masks for all persons working in restaurants, entering hospitals, and using public transportation systems (CDC 2003).

The city of Toronto, Canada, experienced the largest outbreak of SARS outside Asia, with 225 cases (Institute of Medicine Forum on Microbial Threats 2004). The city adopted a voluntary ten-day home quarantine strategy for individuals with

close contact with a case. In total 23,103 individuals were quarantined, of whom twenty-seven were issued a legally enforceable quarantine order (Svoboda *et al.* 2004). Toronto also closed hospitals and required healthcare workers to wear masks to limit the spread of the disease, whilst Hong Kong and Singapore also implemented quarantine measures (Institute of Medicine Forum on Microbial Threats 2004). While some countries decided to give a legally binding quarantine order to non-compliant individuals, others decided on stricter enforcement measures such as isolation in a guarded room, the use of security ankle bracelets, video monitoring, fines and jail sentences. These were the exception rather than the rule, and voluntary quarantine was effective in the majority of cases (Institute of Medicine Forum on Microbial Threats 2004).

Additionally to containment strategies, governments also implemented measures at international borders, such as pre-departure temperature screening, post arrival disembarkation screening, maintaining “stop lists” of people with suspected SARS to prevent such individuals from traveling, and isolation of ill travelers with suspected or probable SARS (Institute of Medicine Forum on Microbial Threats 2004).

A few countries also decided to restrict population movement in order to prevent SARS from entering their territory. On May 8, Kazakhstan closed its 1,700 km border with China to all air, rail and road traffic, as well as repatriating Kazakh nationals from China (Yermukanov 2003). Russia also closed the majority of its border crossings with China and Mongolia in May 2003, as well as suspending flights from China, Hong Kong and Taiwan (Vassileva 2003). Several other countries decided to suspend flights from and toward SARS affected areas.

The SARS outbreak also elicited a global response from WHO which in a rare move, issued a travel advisory on March 15 and April 2 recommending that persons traveling to Hong Kong and Guangdong Province consider postponing all but essential travel until further notice (WHO 2003). This was the most stringent travel advisory issued by WHO in its fifty-five-year history, which was eventually extended to Beijing and Shanxi Province, China, and Toronto, Canada, on April 23 (WHO 2003).

By May 23, 2003, the total number of cases reached 8,000, but the epidemic started to show signs of peaking and travel advisories were gradually removed (WHO 2003). In addition to bringing unprecedented attention on emerging diseases, SARS had a deep impact on global travel, with volume of travel to and from China down 45 percent in June 2003 compared to June 2002, and down 69 percent between Hong Kong and the US (BBC News 2003), and a cost of close to US\$40 billion to the global economy (Institute of Medicine Forum on Microbial Threats 2004).

During the SARS outbreak, though there was initially internal migration in some countries, notably China, quarantine, restriction of travel, health communication and other containment measures implemented by national governments contained the epidemic and may have provided the assurance necessary to prevent real or attempted mass internal migration.

### ***The H1N1 pandemic, 2009***

In March 2009, human cases of infection with a novel strain of influenza A virus (H1N1) emerged in Mexico, the United States, and Canada. Throughout March and April, Mexico experienced outbreaks of a respiratory illness of unknown origin and reports of patients with influenza like illness came from throughout the country. By mid-April, several cases of severe respiratory illness in Mexico were confirmed as infection with what was first referred to as swine-origin influenza A H1N1 virus. From March 1 to April 30, 1,918 suspected cases and eighty-four deaths were reported in Mexico. By April 28, seven countries on four continents had reported confirmed cases. By June 3, the first case of H1N1 influenza was reported in Africa, the last continent that had remained unaffected by the virus (Sekkides 2010).

It was clear from the early days of the pandemic that the rapid spread of the disease and its high transmission rate could not justify a containment strategy (Huang 2010). On June 11, WHO declared the start of a worldwide pandemic by raising the pandemic alert level to six—its highest level. By then, more than 30,000 cases in seventy-four countries had been reported (Chan 2009). At the global level, H1N1 was the first, and to date the only, event to be declared a Public Health Event of International Concern (PHEIC) under IHR, on April 25, 2009. Such a declaration requires the WHO Director-General to issue temporary recommendations on how countries should respond to the PHEIC. The Director General, on advice of the IHR Emergency Committee, proposed that nations increase their active surveillance for unusual outbreaks of influenza-like illness (Katz 2009). Throughout the pandemic WHO regularly communicated with all member states through the National IHR Focal Points and the WHO public website to inform them of recommendations for actions to mitigate the consequences of the epidemic (Katz 2009), such as vaccine development and distribution, use of antiviral medications, social distancing via school closures, work pattern adjustment, self isolation of symptomatic individuals and advice to their caregivers, cancellation of mass gathering events, and screening at international transit points in some circumstances. WHO explicitly stated that it did not recommend travel restrictions related to the virus but did recommend that persons who were ill delay international travel (WHO 2009b).

National responses to the H1N1 pandemic showed a range of actions, from compliance to WHO's advice to measures taken against WHO recommendations. The United States broadly followed WHO guidelines and focused its response on vaccine and antiviral medication distribution, ensuring sufficient capacity for required medical care and non-medical interventions to mitigate the impact of the disease (PCAST 2009). About twelve million courses of antivirals and vaccine were allocated from the federal reserve to the most affected states; hospitals were allowed to plan for additional sites for treatment and triage of a potential surge of patients; the Centers for Disease Control (CDCs) recommended that people with influenza-like illness remain at home; and the government issued guidelines for

schools with one or more cases of H1N1 to close for fourteen days (Huang 2010). Despite pressure from the Congress, the border with Mexico remained open; the US State Department however issued a travel warning to Mexico, leading to major airlines curtailing flights into Mexico (Huang 2010).

By contrast, China's containment policy focused on attempting to prevent the importation of H1N1 and to prevent it from spreading internally (Huang 2010). It screened inbound passengers from countries that had reported H1N1 cases and on May 1, 2009, suspended direct flights from Mexico. By the end of May, China was screening every inbound international flight and quarantined the whole flight if any passenger was found to have a temperature above 37.5 degrees Celsius. Tens of thousands of people were being held in government quarantine facilities by the end of July 2009. In light of mounting evidence of the mild nature of H1N1 influenza and the failure of containment, China formally abandoned this strategy in September 2009 and focused on mitigation by controlling outbreaks and reducing severe cases and fatalities (Huang 2010).

Other countries also put measures in place that contravened WHO recommendations as well as the spirit of the IHR. In Hong Kong, 300 guests and employees of a hotel where an infected man stayed after he arrived in Hong Kong from Mexico were confined for a week under police guard; in Singapore, anyone who had recently visited Mexico was placed in home quarantine (Gostin 2009). In Europe, the European Centre for Disease Prevention and Control (ECDC) released guidelines in line with WHO recommendations (ECDC 2009). Although most European countries adopted a mitigation approach similar to the American strategy, there were some instances of national decisions not in line with WHO and ECDC guidance, such as Slovakia closing its border with Ukraine in November 2009 (Gurniak 2009). By the end of the pandemic in August 2010, 214 countries had been affected and over 18,000 people had died, although this is likely to be an underestimate: in the United States alone, the 2009 H1N1 virus caused an estimated fifty-nine million illness episodes, 265,000 hospitalizations, and 12,000 deaths (Writing Committee of the WHO Consultation on Clinical Aspects of Pandemic 2010). Global travel to and from Mexico was reduced by 40 percent during the pandemic (Bajardi *et al.* 2011).

As in the SARS case, H1N1 is thought to have caused some internal migration, particularly in Mexico soon after its identification. Internal efforts to control the pandemic under the IHR, including open and transparent communication, however, provided an orderly global framework for pandemic response to which most countries adhered, and mass migration did not occur.

### ***HIV-related travel restrictions***

Placing entry, stay, or residence restrictions on non-national people living with HIV (PLHIV) has been an early and persistent response to the HIV/AIDS epidemic from governments (Amon and Todrys 2008). The restrictions include restriction on long-term residence, compulsory HIV status disclosure, or an absolute ban on entry (Rushton 2012). These restrictions are generally justified on two arguments:



public health security, arguing that allowing PLHIV to enter the country exposes the domestic population to a public health risk, and the economic argument that allowing PLHIV to enter on a long-term or permanent basis, imposes significant economic costs on the domestic health system (Rushton 2012).

The fear of immigration to seek more advanced healthcare became even more prominent from the mid-1990s when antiretroviral therapy (ART) started to become available in the developed world but remained inaccessible in developing countries (Rushton 2012). In 2010 however, President Barack Obama, announcing the end of the HIV-related travel restrictions in the United States, conceded that “the US (HIV) policy was based on fear, not science” (Franke-Ruta 2009, no page). Indeed from the very early stages of the HIV/AIDS epidemic, evidence showed that such travel restrictions were not justified, mainly owing to the fact that HIV is not transmissible through casual contact (Amon and Todrys 2008).

As early as 1985, several member states sought WHO’s advice on the possibility of issuing travel restrictions for HIV infected individuals. WHO advised that testing and certification of international travelers were not warranted, on the basis that it was not justified from a public health point of view and not required under the IHR (WHO 1986). WHO reiterated in 1988 that screening international travelers was not an effective strategy to prevent the spread of HIV (WHO 1988). In 2006, the Office of the United Nations High Commissioner for Human Rights (OHCHR) and the Joint United Nations Programme on HIV/AIDS (UNAIDS) stated that “any restrictions on the rights to liberty of movement and choice of residence based on suspected or real HIV status alone cannot be justified by public health concerns” (UNAIDS 2004, 4).

The economic argument has not been substantiated by evidence either, as countries without HIV travel bans did not find an increase in HIV-positive immigrants (Nieburg *et al.* 2007). Skepticism about the economic argument grew further with the plummeting cost of ART (Rushton 2012). While there is a cost to treating HIV-positive migrants, it has been argued that HIV treatment is not different than other chronic illnesses and as such HIV-specific legislation is not justified.

HIV travel restrictions may not only be ineffective but could even be harmful to public health, by creating a false sense of security in countries where HIV travel restrictions are in place and by discouraging migrants from undergoing testing or seeking treatment (Ganczak *et al.* 2007). A 2006 study showed that a majority of HIV-positive travelers to the US did not comply with the legally mandated disclosure of their HIV status at the time and that a significant minority, fearing deportation if ART medication was found in their luggage, would stop taking medication for the duration of their stay, increasing the risk of developing drug resistance (Mahto *et al.* 2006). Another consequence of the US travel ban has been the refusal to hold the International AIDS Society conference there (or in any other country with HIV-related travel restrictions) due to HIV positive delegates not being able to attend (IAS 2009). Beyond public health implications, HIV-related travel restrictions reinforce stigma and discrimination against PLHIV and strengthen the idea that immigrants are a danger to the national population.

Beyond the theoretical shortcomings of HIV-related travel restrictions, these migration policies have affected individual lives in a very concrete way, such as in the case of a Ukrainian national who immigrated to the Russian Federation in order to be reunited with his partner, and who had to travel back to the Ukraine and re-enter Russia every three months to avoid mandatory HIV testing, as a positive test would lead to his permanent deportation (UNAIDS 2009). Documented individual stories are numerous, and the individual consequences of the HIV-related travel restrictions include irregular immigration, loss of income or livelihood, family breakups, loss of dignity and in some anecdotal reports death in confinement (UNAIDS 2009).

Furthermore, immigrants who are found to be HIV positive in countries with travel restrictions in place often face suboptimal care in government facilities while waiting for deportation (HRW 2007). The United Nations High Commissioner for Refugees (UNHCR) has clearly stated that refugees and asylum-seekers should not be targeted for special measures regarding HIV infection and that there is no justification for screening being used to exclude HIV-positive individuals (Rushton 2012). Nevertheless the impact of HIV travel restrictions has been strongly felt by asylum-seekers, discouraging HIV-positive asylum-seekers from using legal immigration channels (Amon and Todrys 2008) and leading to inappropriate treatment of asylum-seekers. In 1991, the United States denied entry to 115 HIV-positive Haitian political refugees and their families who otherwise would have been eligible for refugee status. UNAIDS has also noted the dilemma of some families with an HIV-positive member having to decide whether to forgo seeking asylum or to leave a family member behind (UNAIDS 2009).

Although the number of countries imposing HIV-related travel restrictions has remained more or less stable between 1989 and 2008 (Rushton 2012), an International Task Team on HIV-related Travel Restrictions was set up by UNAIDS with support from the Global Fund and WHO in 2008, in order to spearhead a major global effort for the elimination of such restrictions (UNAIDS 2009). Since then, some high profile countries such as China, the US and South Korea have started removing travel bans, potentially signaling the beginning of a broader trend (Rushton 2012). Nevertheless, as of July 2012, 45 countries are still maintaining total or partial travel and immigration bans on HIV-positive individuals.

## Conclusions

While the health consequences of migration are well documented, it is difficult to attribute collective migration directly to health crises, especially migration across international borders. In cases where population migration occurs, it is generally within a wider humanitarian crisis, either man-made (such as conflict or nuclear disasters) or natural (such as earthquakes or floods). These situations are often an immediate threat to life and are more likely to trigger population movement. Even when the underlying event is not as sudden or catastrophic, such as the gradual collapse of the state in Zimbabwe, migration due to health crises occurs against a

background of continuous emigration to bordering countries, with populations displaced by the health crisis using the same mode of movement as those migrating for other purposes, making it difficult to attribute migration directly to health or quantify the health-related population movements. Migration occurring in the context of a health crisis is therefore best described as a mixed pattern of migration.

When there is population movement as a result of a health crisis, migration tends to be internal, to regions directly outside the immediate crisis zone, and early on in the health crisis when information is often scarce, contradictory or erroneous. This movement is usually not sustained. Recent examples in India and China have shown populations leaving large urban centers to go back to their family villages (Pomfret 2003).

At the individual level, migration in search of better healthcare does occur. This can lead to a perceived threat of infection and of economic burden for countries where treatment is available, although evidence on both is weak. This in turn can lead to travel restrictions, deportations, and violation of human rights (Amon and Todrys 2008; Rushton 2012).

One specificity of health crises is, in many instances, the ability of individuals or communities to cope with, or to mitigate the effect of the crisis. The gradual improvement of the understanding of infectious diseases, their causative agents, modes of transmission and evidence-based ways to control their spread have empowered individuals, populations and governments to adopt preventive behavior, pre-empting in many cases voluntary or forced migration (Svoboda *et al.* 2004). Such preventive behavior empowers individuals to take an active stance against the disease—for example, by practicing good personal hygiene or drinking from a safe source such as bottled water, reducing the risk. These possibilities offer an alternative to fleeing, and may explain in part why people often choose not to leave an area where a health crisis is occurring.

While such responses may not be available in resource and infrastructure-poor countries where the majority of health crises occur, they are often provided by international partners and thus contribute to the prevention of mass emigration. In the H1N1 pandemic, social distancing, voluntary isolation, quarantine or mass vaccination were offered to the population of most countries as a pragmatic and evidence-based approach to deal with the health crisis (ECDC 2009; PCAST 2009). It is not, however, possible to predict whether the absence of these measures would have led to larger population movements. Additionally, health crises may lead to individuals or groups being too sick or frail to migrate and being trapped in crisis zones. In July 2012, an Ebola outbreak in Western Uganda led to patients fleeing a hospital where some of the infected patients had died (Chonghaile 2012). In such a context, sick or elderly patients may not be physically able to leave, increasing their chances of contracting the virus, which can kill up to 90 percent of those in contact with it (Chonghaile 2012).

In addition, current understanding of transmission dynamics has made outdated the idea that diseases can be stopped at borders. Modern outbreaks such as SARS or H1N1 have shown that diseases can be disseminated worldwide in a matter of days,

the volume and speed of global travel making it impossible to stop infections at borders. Mathematical models provide little evidence that travel restrictions reduce the spread of disease (Bajardi *et al.* 2011), the exception being perhaps when trying to contain localized outbreaks. This evidence is reflected in the IHR, which focus less on control measures at borders and more on detection and response at source, with public health surveillance and response capacity building. As a principle, the IHR attempt to keep restrictions on population movement to a minimum.

The IHR have been amended over the years to enable the international community to respond to cross-border health crises in a rapid and efficient way by enabling global communication channels and encouraging local public health capacity building, both in the detection and management of health crises. The regulations allow for a tailored response to be advocated as and when crises arise, focusing on limiting the spread of diseases while keeping travel and trade restrictions to a minimum. While the IHR encompass travel-related public health measures to limit the spread of disease, such as control measures at points of entry by air, sea or ground, they are not designed to make recommendations on migration-related issues relating to health crises, such as the status of individuals or populations leaving a health crisis area. Individuals leaving purely to escape a health crisis are unlikely to be recognized as refugees pursuant to the 1951 Convention relating to the Status of Refugees. They are more likely to be considered migrants rather than refugees, as for Zimbabweans entering South Africa during the cholera outbreak.

Outside of health crises, infectious diseases can impact travel and migration at the individual level, as seen in the context of the worldwide HIV epidemic. While there are legal precedents for successful health-related asylum claims, particularly for HIV-positive individuals, asylum was granted on the basis of the fear of persecution associated with HIV status or sexual orientation rather than health status. The reverse, individuals qualifying as refugees who are denied asylum and deported because of their HIV status, has been more commonly seen. UNAIDS have stated that HIV-related migration restrictions have regularly violated the human rights principle of *non-refoulement* of refugees (UNAIDS 2004). These cases fall outside of the remit of the IHR.

Nevertheless, the flexibility extended in much national legislation to people who may not satisfy the legal criteria for refugee status, but may be in danger if they return to their country of origin, could be extended to people from countries undergoing health crises. Similar provisions already exist for example for people whose countries have been affected by natural disasters (such as US policy toward Montserrat and Haiti). As this chapter has shown, there is often an interaction between natural disasters and health consequences, and so such a policy understanding should be relatively easy to achieve. The policy challenge would be to know when deportation bans on the basis of health crises may be lifted, and it would seem sensible that these would be aligned with WHO declarations.

In a world of rapid travel, trade and climate change, where the frequency of emerging infectious diseases and other health problems is on the rise, the potential for increased health-related migration makes it a necessity to better define its

status. Greater efforts should be made to encourage governments, and organizations that work with migration and migrating populations, to understand and abide by the IHR as a means of strengthening the potential to prevent migration related to health crises while ensuring the best possible protection against disease.

## Recommendations

- More research is required on the impact of health crises on migration. While there is limited evidence both historically and more recently, this evidence tends to be anecdotal and hard to verify. Empirical challenges involve identifying and accessing affected populations; conceptual challenges include attribution and distinguishing health from other motivations to migrate.
- Greater coherence is required between the IHR and migration policies and practices at the national and international levels in order to inform government responses during health crises that help populations to avoid migration, and potentially pre-empt unwarranted decisions to close borders or restrict entry, as have been witnessed in the case of HIV.
- Greater efforts are required to encourage states to abide by the IHR, including the need for maintaining strong core capacity in public health, and for organizations that work on migration and/or with migrating populations to fully understand the IHR framework and its potential to prevent migration related to health crises.
- At the national level, greater coordination is required between government agencies separately tasked with migration and health mandates.
- National migration policies should accommodate the assistance and protection of migrants arriving from, or faced with the prospect of returning to, areas affected by health crises, including by suspending deportation orders until the health crisis has subsided.
- Special effort should be made at the national and global levels to ensure that populations are empowered to protect themselves from diseases that have the potential to spread internationally.
- Efforts should be made to ensure that the mass media have the knowledge and understanding to contribute to health protection and understanding of risks and their management.
- Greater efforts are required to continue to promote and increase access to healthcare by strengthening developing country capacity to deliver health services and procure medicines and vaccines in order to address needs that, if unmet, could lead to individual migration for healthcare.

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