

## Chapter 1

# Critical Cases in Global Health Innovation

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Global health is in a cascading crisis as the powerful process of globalisation gathers ever more of the world in its grip. Amidst the many material and epistemic advances brought by globalisation, many millions of people still die annually from infectious and chronic disease. These mega deaths are made all the more tragic, threatening, and morally reprehensible precisely because so many are predictable, preventable, and treatable now.

For most of the past millennium, many died quickly, painfully, and prematurely from infectious diseases such as smallpox, plague, and cholera. They died in large part due to ignorance, malnutrition, poor water and sanitation, and the failure of the diagnosis and treatment process to protect their health. They were largely left with only divine retribution as the dominant cause of their illness and the provision of spiritual solace and the hope of a better afterlife when death approached. European imperialism carried new diseases and death to much of the world, while the growth of commerce and travel brought illness from ever more distant continents into the European core to exact a similarly fatal toll. Even with the growth of the national quarantine system over the past millennium, and the emergence of intergovernmental health conferences, regulations, and institutions and vast improvements in public hygiene and sanitation in the second half of the 19th century, many still died as the 20th century began. The great influenza pandemic at the end of World War I killed an estimated 50 million around the world, taking more lives than those killed deliberately during the world's most deadly war to date (Soper 1919; Harrison 2006).

The 20th century promised a much brighter and healthier future in so many ways. It brought advances in medicine, hygiene, education, sanitation, and public health. These came with the professionalisation of health practitioners, the creation of pharmaceutical firms of national and then international reach, and the advent of philanthropic nongovernmental organisations (NGOs), such as the Rockefeller Foundation, devoted to research to alleviate humanity's suffering. At the end of World War II the victorious powers created the World Health Organization (WHO) to produce health for all and assist the new states freed from colonialisation as they constructed their governments to provide their citizens with better health (Goodman 1971). As with earlier imperial ventures and world wars, the Cold War and periodic hot wars that followed also spurred innovation, for the imperial powers acquired

new national security needs to identify, treat, and prevent the diseases their troops encountered in the many exotic locations where they were now deployed. At the height of the Cold War, the success of the WHO-led smallpox eradication campaign demonstrated that ideological differences could be overcome in the name of global health. With the ensuing collapse of the Soviet Union and the spread of openness to regions of the globe where it had long been denied, there was great anticipation that chief among its fruits would be significant improvements in the health and welfare of citizens everywhere.

Post-Cold War globalisation created a new generation of possibilities and resources to save lives, increase life expectancy, and improve the quality of human health and life. It brought and spread new knowledge, diagnostic techniques, therapeutic options, and medicines to treat some of the most important diseases. These were delivered by health professionals with ever more training and specialised knowledge and received by a more informed citizenry taking control of their own health and life. There emerged a greater awareness of the social, economic, environmental, and political determinants of health. The advent of low-cost and rapid communications and transportation promised to spread information, assistance, and wealth to foster health everywhere in the world.

But globalisation also spread disease and death (Drager and Beaglehole 2001). The rapid increase in social and economic interconnectedness led to new health threats and the re-emergence of old health threats long thought to be under control. In the span of just over two decades, HIV/AIDS has gone from being unknown to science to being the single most important infectious disease in the world. In some countries it has prevalence rates so high that it has become a significant threat to economic and national security and, potentially, to national survival itself (Price-Smith 1999; Peterson 2002). While many now receive affordable treatment, even more become infected each year. Other diseases such as tuberculosis (TB) and vector-borne diseases such as dengue fever and malaria are re-emerging as major global health threats, with their control complicated by the development of resistance to many of the existing therapeutics agents used in their treatment (Osterholm 2005). Biological and political resistance to many of the proven medicines and treatments long relied on is, in many cases, on the increase. Globalisation increases the rate and means for health threats to be transplanted from one region of the world to another.

At the same time, globalisation has enabled healthcare professionals badly needed in their own poor countries to migrate to better jobs and opportunities in the already abundantly endowed North. It has further facilitated the export and marketing of behaviour and lifestyle choices associated with adverse health effects. This has given rise to new epidemics of conditions and chronic diseases associated with alcohol, smoking, and consumption of processed foods, such as diabetes, obesity, and various cancers, as well as a range of diseases associated with exposure to a long list of environments pollutants (Beaglehole and Yach 2003). This comes at a time when governments around the world have been forced by persistent poverty, financial crisis, natural disaster, and war to watch their public health systems decline and the economic and health inequalities among their citizens rise (Garrett 1996).

## **The Inadequate Governance Response**

In the face of such demanding deadly challenges—now reaching crisis proportions in the sheer volume of avoidable deaths—the global community still struggles to devise an appropriate and adequate response. The causes and cures of the compounding global health crisis that come from agriculture, demography, economics, ecology, security, and technology are well known, but seldom related to health and a health governance response in a comprehensive or coherent way. Through its general requirements for reductions in public sector spending, the neo-liberal economic policies espoused by the International Monetary Fund (IMF) and the World Bank have often counterproductively constrained the national governments that borrow from them and thus made them fail to protect global health (Thomas and Weber 2004). Lack of capacity and an abundance of corruption hamper national governments around the world. Within wealthy countries, there still exists an isolationist mentality that views the developing South as a reservoir of human disease that can be guarded against by better medicines, bigger border barriers, and more protective policies at home (Aginam 2004). Yet domestic health policy cannot address the determinants of health that originate beyond national borders. And the dire poverty in much of the developing world is still found in abundance inside the developed North itself (Kickbusch and de Leeuw 1999).

Sovereignty, national suspicions, and profit motives compound the challenge. Attempts to harmonise national policies for the purpose of strengthening global health continue to face fierce resistance from states unwilling to give up sovereignty, as shown by the recent process of revising the International Health Regulations (IHR) (Gostin 2004). Hindered by conflict over human rights, bioterrorism, and the political status of Taiwan, the success of those regulations depends ultimately on whether states decide to implement them (Fidler and Gostin 2006). Certainly much of the responsibility can be laid on the doorstep of national governments, as states have yet to internalise the value of public health as a human right (Fidler 2001). But other actors share the blame. Transnational pharmaceutical companies have had little financial incentive to invest in the research and development (R&D) of drugs for neglected diseases such as trypanosomiasis, even though the moral imperative has always been there (Trouiller et al. 2002; t'Hoen 2002).

At the centre of the growing array of actors responsible for governing global health stands the WHO. This organisation, charged with improving the health of the world's population, has been limited by political and financial constraints imposed by its member states. It may indeed need radical reform to do its job in today's world (Godlee 1994). There is a gap between monies committed and what is actually delivered (Labonté and Schrecker 2004). However, the principal impediment to improving global health is not merely lack of money but the poorly coordinated and bureaucratic nature of the disbursement of funds. It is also the tendency of governments, international organisations, and public-private partnerships (PPPs) to focus on individual diseases instead of vigorously investing in health human resources and public health infrastructure and working to reduce social, economic,

and environmental determinants of disease in both the developing South and in the developed North (Garrett 2007). The comprehensiveness, coherence, and credibility of global health governance are ultimately at stake.

### **Recent Innovations**

In light of these growing health challenges and failures in the governance response, there has been considerable innovation, especially as many new actors have gotten into the global health governance game (Cooper 2007). In the realm of institutions, PPPs have demonstrated their value in areas where the public sector lacks skills and resources, such as product development, manufacturing, and marketing, even if PPPs are not appropriate for policy development or regulation itself (Widdus 2001). In the realm of ideas, the concept of global public goods has arisen as an effective way to raise money for mechanisms to strengthen communicable disease control (Smith et al. 2004). The proposal to develop a global health research fund through direct public investment in vaccine development, as well as an international health treaty to enshrine countries' commitments for such a fund, has been widely embraced, showing that new international norms are being developed regarding the concept of global health (Archibugi and Bizzarri 2004). Investing in public health is increasingly perceived to be a core criterion of 'good governance' (Dodgson, Lee, and Drager 2002; Fidler 2004). Philanthropists led by Bill and Melinda Gates and faith-based communities, private sector corporations, and celebrities from the arts, athletics, and entertainment have come forward to mobilise much more money, awareness, expertise, and political pressure than before. And because of the intersection of domestic and foreign policy, consensus is mounting toward pooling state sovereignty and organising global health governance through a series of intergovernmental networks, with an unencumbered WHO coordinating global health policy (Kickbusch 2000; Taylor 2004). Indeed, there is a cornucopia of innovative individuals, institutions, ideas, and instruments now engaged and available. The central challenge for global public health is not only to add more, but above all to determine in disciplined fashion which ones work under different circumstances to generate the health all deserve.

### **The Analytical Framework**

This book takes up that task. Its first and central purpose is to develop and test in critical cases an analytical framework that explains the process of innovatively delivering global public health in today's complex, rapidly changing, globalised world. Its second purpose is to assess on this basis the current state of innovation in global health governance. Its third purpose is to evaluate and expand the innovations that could improve the way the governance system works and the health that results.

This volume builds directly on a general framework of global health governance first constructed to assess and improve the performance of the major intergovernmental

institutions of the United Nations and the G8 and the many actors now involved in their governance systems (Cooper, Kirton, and Schrecker 2007). That framework flowed from the literature in the rapidly emerging field of global health governance (Kirton 2009, forthcoming). The framework had three core components: physical challenges to health, governance responses to these challenges, and the innovation called forth and needed in the face of new challenges when the old responses failed.

That general framework of challenge-response-innovation conceived of intergovernmental institutions, national governments, civil society organisations, private firms, and individual citizens as complacent reactors, constrained learners, and reluctant innovators. Only seldom were they prescient, creative, proactive, strategic actors who regularly and accurately anticipated future trends and adapted to or prevented the threats to health that physical challenges brought. To be sure, there were some supply-driven successes, such as the eradication of smallpox. But mostly the principal actors' innovations were reactions to severe crises and shocks. Their next response to such crises typically entailed trying to do more of the same, on the basis of their existing missions, mandates, organisational routines, professional repertoires, and resources, based upon the dominant understanding of cause-and-effect relationships to solve the new problem. The initial instinct was to replicate past successes in new cases. The first defence in the face of failure was to plead for more money and other resources to solve the current challenge. Yet in response to the failure of these old actors and approaches to meet those challenges, there arose competition from the many new actors and new approaches that had entered the global health game. From this challenge and failure of the old responses and new competition came innovation in the dominant institutions and ideas that govern global health.

Driving successive stages of this challenge-response-innovation dynamic is the process of globalisation, as it has intensified from the mid-19th century until now. Most broadly, globalisation has increased the scale, speed, scope, simultaneity, and domestic intrusiveness of disease and the other forces that directly or indirectly harm human health. This has placed the demand for global health governance on centre stage in many countries as the 21st century unfolds. Globalisation has also intensified the economic, ecological and social interconnectedness, interdependence, complexity, and uncertainty that add force to contemporary global health challenges. Yet the scientific and information revolutions fuelled by globalisation have also brought new insights and resources through which many more actors can respond to the challenge in innovative and effective ways.

The challenge-response-innovation framework developed and tested in this book builds on this basic conception. It proceeds on three levels. The first traces the process and pathways of action in each of the three components of challenge, response, and innovation. The second causally connects these three components by identifying the responsiveness, appropriateness, and effectiveness with which challenges evoke response and innovation. The third charts the overall transformation brought about by new non-state controlled vulnerabilities, by governance innovativeness as a self-

sustaining, spreading process, and by non-Westphalian forms of sovereignty as the innovative key.

The first level of process charts in detail the pathways of challenge, response, and innovation by identifying in each case who does what to whom, to what effect, and why. This charting starts with the problem of the physical health challenges that could catalyse a public governance response from various players and that could lead to innovation on their part. Such physical health challenges, with their ultimate origins in human, animal, and plant biology or material chemistry, can be brought by state, non-state, and non-human actors or a mixture of the above. They can be intentional, targeted, and guided or unintentional, random, and uncontrolled. They can emerge and remain in the developed North or developing South, or move from South to North or North to South. They can arise and spread, through physical and psychological processes, in a slow, incremental, largely invisible fashion, or in a sudden, severe, concentrated, visible, shocking, panic-inducing one.

The second component—public governance response—involves a similar tracing. Such responses can come from some or all of concerned and caring individuals, health professionals, private sector, civil society actors, nation-states, and international institutions. They can respond consciously to the physical health problem or unknowingly in ways that affect the challenge for better or worse. They can respond at the source, at the borders the threatening challenge crosses, or at the destinations to which it flows.

The third component of innovation follows a similar cadence. It conceives of innovation broadly as changes over time that are novel or a rediscovery of past concepts or practices, rather than a return to what has been regularly relied on before. It asks who innovates, with the spectrum ranging from individuals to international institutions themselves. It traces how deliberately they innovate, from accidental discoveries through trial and error to purposeful big project science. And it identifies where they innovate, with the possibilities ranging from the physical source to the destination to which the disease has spread.

The second level of system responsiveness causally connects the three components of challenge, response, and innovation. It does so by identifying the relationships among them according to the three criteria of responsiveness, appropriateness, and effectiveness. Responsiveness refers to the speed with which the first appearance of a physical health challenge affecting a large population evokes a response and then innovation as a result. Here the spectrum extends widely from non-existent or slow, through immediate responses and resulting innovations in the middle, to proactive, preventive action at the other end of the scale. For convenience the framework is arranged with the physical challenge as the independent variable, public governance response as the intervening variable, and governance innovation as the dependent variable. But through feedback loops and autonomously, innovation can start new processes of public governance that prevent physical challenges before they start.

The criterion of appropriateness refers to the fit between the physical problem, governance response, and resulting innovation in its diagnosis, resource mobilisation, targeting, instrumentalities, and centre of responsibility. The criterion of effectiveness

refer to the quality of the response and innovation in terms of the number of lives saved and improved and the broader ecological, social, economic, and political-security values enhanced.

The third level of system transformation assesses the causal connections according to three criteria. The first is the new vulnerability, in which non-state and non-human actors create in unconscious, unintended, untargeted, uncontrolled fashion the physical health challenges that rapidly and readily flow across state borders around the world to overwhelm the inherited governance responses and kill or harm many there (Kirton 1993). This ‘neo-vulnerability’ is different from the inherited, largely Westphalian structure in which states and their national governments largely cause or control disease within or at their borders and rely on sovereignty-respecting international diplomacy, agreements, or institutions for whatever international coordination is required to cope. The old vulnerability arose in a still state-centric world of bioweapons and biowarfare: states sent controlled threats against their adversaries in ways that the latter’s unilateral change in national policy could not protect against and where such failure bred new international institutions to cope (Keohane and Nye 1977). Neo-vulnerability, in contrast, arises in an era of intense globalisation where many threats from many unconscious, uncaring sources attack and overwhelm the standard repertoire of national and intergovernmental policy responses and call for multiple sources and forms of innovation within multilevel governance instead. Here the size, speed, and spread of the new vulnerability is hypothesised to catalyse multi-actor innovation when the initial response from Westphalian governance fails.

The second criterion is innovativeness. It refers first to the speed with which an innovation effectively solves the challenge when the previous Westphalian governance repertoire has not. It also refers to the spread of the innovation in a broader process of borrowing and adaptation that saves lives in other places, assaulted by other diseases, in coming years. Here the novel, appropriate, and effective innovation created in response to a particular health challenge becomes institutionalised, adopted by other actors for other purposes, and ultimately inspires a culture of innovation overall (Homer-Dixon 2001).

The third criterion is the new sovereignty. It arises as actors beyond nation-states and their intergovernmental institutions emerge as appropriate and effective centres of innovation and thus become legitimately embedded as authoritative institutions of global health governance. In the realm of ideas, health governance passes from being a matter of national security for imperialism, war, or counter-terrorism, or a matter of economic advantage in a relative capability competition or a matter of redistribution to develop countries than can help or harm; it becomes a right and a responsibility to protect human lives and the global ecosystem on which all life depends. In the realm of institutions, those actors that can appropriately, effectively, and legitimately work with others to produce such values create the fluid networks that are the health sovereigns of the new age. This new sovereignty transcends the new, ‘open source’ anarchy that the entry of so many more diverse players into global health politics, diplomacy, and governance has brought (Fidler 2007, 2008).

## **The Analytical Strategy**

To develop and test this framework this book looks beyond and below the major intergovernmental institutions long responsible for global health. It starts with specific, current, critical cases of disease that provide the catalyst for the cadence of challenge-response-innovation to start. Five cases provide the focus: severe acute respiratory syndrome (SARS), avian influenza, HIV/AIDS, polio, and tobacco. These cases provide the necessary variation on the independent variable of physical challenge. SARS arose from non-human sources and spread in uncontrolled fashion with great speed from South to North. Avian influenza in its deadly human H5N1 form likewise arose from non-human sources and has spread in uncontrolled fashion, although more slowly and still largely where it started among countries of the developing South. HIV/AIDS emerged from non-human sources in the South but was spread by humans to and in the North and has slowly spread back across the South. Polio came from non-human sources and spread slowly across the North and South but has been driven back over many decades to a few remaining enclaves in the South. And tobacco flowed from intentional and conscious human activity first in the South, then largely in the North, and now increasingly in the South.

Across these five cases, the physical character of the challenge alone does not readily account for the deaths these diseases have brought. The death toll from SARS and avian influenza has been modest, while that from the others has been very high. It is thus the quality of the governance response and the innovation that critically determines who lives and dies.

To be sure, these five cases are by no means all of the many high-profile and neglected, acute, and attrition cases of communicable and non-communicable diseases that deserve attention by global health scholars and practitioners today. Indeed, in focussing on these big five, this volume deals with a wide number of others that are and should be on the global health agenda today. These five allow for a point of entry to this much broader terrain, and a disciplined, detailed way of identifying lessons that could be used much more broadly to understand and improve global health as a whole.

To explore the dynamics of challenge-response-innovation, this book examines in turn these five cases along a spectrum from acute outbreak to diffuse attrition events. The individual sections devoted to the first three contain chapters that generally concentrate in turn on the challenge, response, and innovation. Each section and chapter deliberately contains some overlap in case subject and analytical components in order to facilitate and highlight comparison, convergence, and cumulation in the overall story of innovation in global health governance as a whole.

To conduct this analysis, this book adopts a broad but bounded definition of the core, rapidly changing and heavily contested conceptions that comprise the scholarly field of global health. 'Global' refers to the geographic reach across many, substantially separated sovereign state boundaries of processes that directly do or could constitute, cause, cure, or otherwise change human health. 'Health', consistent with the definition contained in the WHO's (1986) charter, consists of all physical

and mental things that directly constitute and improve the longevity and quality of human life. ‘Governance’ is the conscious creating, shaping, steering, strengthening, and using of international and transnational institutions and regimes of principles, norms, rules, and decision-making procedures that influence how autonomous actors behave (Krasner 1983). ‘Diplomacy’, both generically and in the form of global health diplomacy, is the conscious practice of actors operating across international boundaries to get what they want from outsiders without the use of violent physical force. Scholars of international politics of realist, liberal-institutionalist, political economy, and constructivist traditions each have competing conceptions of how governance and diplomacy affect outcomes. But all agree on their importance, with classic realists highlighting diplomacy as the ultimate determinant of what happens in the world (Morgenthau 1948).

### **The Authors**

To enrich and apply this framework, this volume assembles the contributions of leading scholars, researchers, and practitioners from a wide array of global regions, scientific disciplines, and professional fields. It includes those from North America, Europe, Africa, and Asia, and those with extensive experience elsewhere in the developing world. The contributors work in major multilateral organisations, national governments, universities, research institutions, and civil society organisations. Their contributions come from the disciplines of political science, economics, law, sociology, medicine, pharmacy, and a wide range of component fields. The contributions draw upon a broad array of the major theories of global governance, including realism, liberal institutionalism, constructivism, epistemic communities, principal-agency theory, and complexity theory. This book’s purpose is not to test these competing theories against the evidence to identify and proclaim a winner, but to mobilise the insights of several traditions in an improved synthetic understanding of how global health governance does, could, and should work in the contemporary world. Thus many of the contributions are explicitly normative in inspiration, flow from positive analysis into policy-oriented judgements, and offer recommendations for further innovation of both practical and more visionary kinds.

### **The Authors’ Arguments**

Part II, ‘Responding to Pandemics: Severe Acute Respiratory Syndrome’, begins with the lessons from SARS, as the most dramatic and deadly of the infectious diseases recently assaulting the developed North from the developing South with striking severity, speed, and surprise.

In Chapter 2, ‘Epidemic of Fear: SARS and the Political Economy of Contagion’, Andrew Price-Smith and Yanzhong Huang illustrate, through the case of SARS, how in a globalised world no country is immune to the potentially damaging economic

effects of public health emergencies. They argue that SARS exposed the vulnerability of existing governance structures, and that the great fear generated by the failure of governments to control the disease had significant ramifications for the domestic economies of affected states. These proved to be a catalyst for structural change. The Chinese and Canadian experiences show how fear prompted large-scale population flight, avoidance of public spaces and significant decreases in consumer spending and investor confidence. Combined with an increase in healthcare delivery costs, this took a heavy economic toll on both countries. The significant economic impacts and the intense negative international scrutiny of government failings increased the prominence of public health issues among political elites. They created transparency and incentives for more proactive approaches to dealing with other pressing public health issues. The case shows that states need to be more proactive in preparing for unforeseen public health emergencies. SARS has led to significant macro-level innovations at the domestic level in affected countries, most notably in China, as well as to strengthening regional cooperation on public health in southeast Asia. However, it has not had a significant impact on global health governance. It did highlight the antiquated nature of the IHR reporting model and temporarily increased the power of the WHO. But it has not increased states' compliance with international health regimes or the WHO's long-term influence.

In Chapter 3, 'Lessons from SARS: Past Practice, Future Innovation', Carolyn Bennett emphasises knowledge improvement and dissemination, collaboration, and leadership in improving global health outcomes. While SARS highlighted many areas of structural weakness, most notably how governments communicated with each other and with citizens, some jurisdictions performed admirably. Singapore designated one hospital to treat cases, performed contact tracing within 24 hours of case admission, held regular news briefings to share facts and uncertainties, and provided advice to citizens on how to protect themselves from infection. It thus offers a model for emulation and adaptation elsewhere. In Canada SARS led to learning and innovation through the creation of a fact-finding mission, the results of which generated the political will to create the Public Health Agency of Canada (PHAC) and the position of chief medical officer of health at the federal level. But governments must re-learn what public health means. There is merit in community-based 'bottom-up' initiatives, such as Thailand's community health liaisons. NGOs need to be included in public health planning and more emphasis must be placed on addressing the social determinants of health. Finally, there is a need for government candour on public health issues, requiring a shift in culture to be able to admit challenges and ask for help from the international community through the WHO. Effective global health governance requires fostering relationships based on respect and trust and a model of transparency and equity, evidence-based policy, and citizen engagement.

In Chapter 4, 'The WHO and SARS: The Challenge of Innovative Responses to Global Health Security', Adam Kamradt-Scott examines the role and authority of the WHO during the SARS crises. He responds to positions taken by David Fidler, Andrew Cortell, and Susan Peterson that the WHO was guilty of 'agency slack', exceeding its authority and mandate and engaging in unauthorised, unprecedented,

and undesired actions. Kamradt-Scott argues that the WHO was intended to be an independent entity, performing duties on behalf of member states. Communicable disease control was its primary purpose from its inception. The WHO's response to SARS stood in stark contrast to its usual state-centric deferential approach to public health emergencies. While SARS was an exceptional epidemiological event, the WHO's actions were entirely consistent with its mandate and explicitly authorised by the collective WHO membership through its approval of the WHO constitution. It directs the WHO to be the designated leader, coordinator, and policy formulator of global initiatives to control infectious disease. Several provisions within article 2 of the WHO's (2006) constitution are explicit about this. The organisation's interventionist approach, most apparent in its public criticism of the Chinese government, was sanctioned by member states through the formation of the Global Outbreak Alert and Response Network (GOARN) in 2000 and the passing of resolution WHA54.14 on Global Health Security: Epidemic Alert and Response in 2001 (WHO 2001). The ongoing revision of the IHR—the only treaty designed to combat the international spread of infectious diseases—gave the WHO discretionary powers regarding infectious disease policy and procedures. The WHO's actions were thus in keeping with the expectations of the member states—that of an impartial technical organisation charged with a duty of care to safeguard the health of the global population.

Part III, 'Preparing for Pandemics: Avian Influenza', presents a different set of challenges. In Chapter 5, 'SARS and Avian Influenza in China and Canada: The Politics of Controlling Infectious Disease', Sonny Shiu-Hing Lo argues that in today's globalised world, where highly virulent pathogens can be rapidly transplanted anywhere and lead to unforeseen epidemics, a critical measure of state strength in health governance rests on its ability to cope with rapidly emerging public health crises. Three key performance measures—preparedness, transparency, and responsiveness—should be used to assess state capacity in this regard. In the Asian epidemics of acute, highly virulent respiratory infections such as SARS and H5N1 avian influenza, certain Asian jurisdictions, especially densely populated urban centres, both innovated successfully and failed. Other countries, such as Canada, can learn from these experiences to prepare for future public health emergencies such as a global influenza pandemic. Despite Toronto's experience with SARS and the government's development of the Pandemic Influenza Plan for the Health Sector, the Canadian public remains psychologically ill prepared for a large-scale public health emergency. Canada should instil a 'crisis consciousness', for example by ensuring Canadians are aware of the need of government to balance civil liberties with the need to maintain public safety, and prepare for a rapid mobilisation of civic resources to what will likely be an overextended healthcare workforce. It remains unclear whether the logistical challenges that plagued municipal, provincial, and federal governmental responses to SARS—specifically regarding roles, responsibilities, and communication—have been resolved. Lo thus proposes a 20-point action plan to bolster Canadian preparedness for dealing with the eventual epidemic attributed to a highly virulent and infectious pathogen.

In Chapter 6, 'The Role of Civil Society in Pandemic Preparedness', Kathryn White and Maria Banda examine the challenge of avian influenza and what response is needed for society to be prepared for a global outbreak. They discuss how the inclusion of multiple levels and areas of society can benefit the planning for and the prevention of a pandemic. Beginning with the evolution of avian influenza, and the possible lessons learned from each of the responses seen thus far, they look at past failures and potential successes of the global health system and the possible role civil society can play. Turning to governance, they suggest that numerous actors are needed from a wide range of areas, including health, agriculture, trade, the environment, development, and civil society. The best approaches to controlling infectious disease are both transnational and multi-actor. Avian influenza requires a four-part response: a genuine commitment to human development, a dependable and all encompassing human rights system, a public security framework to deal with the security threats of ill health, and a new attitude toward environmental responsibilities that takes food security more seriously. Only when an all-encompassing plan is in place will an investment in global health governance be truly entrenched and society adequately prepared for a pandemic, whether it be avian influenza or some other infectious disease.

In Chapter 7, 'In-Flew-Enza: Pandemic Influenza and Its Security Implications', Yanzhong Huang examines the potential implications of a virulent influenza pandemic on the international economy, on sociopolitical stability within states, and on regional security. He offers recommendations aimed at mitigating the identified risks. The world has changed since the last virulent influenza pandemic in 1918. Improvements have come from the increased prominence of public health within the political arena, the many advances in health sciences and care delivery, the vast improvements in communications technology, the multilayered network of non-state actors involved in health promotion and health care, and the existence of the WHO with a well-defined mandate to provide leadership during public health emergencies. However, 4 billion additional prospective human hosts in a world where access to health resources disproportionately favours populations in wealthy countries, where significantly higher levels of the population live in impoverished settings, where incentives to suppress information in certain jurisdictions remain strong, and where both people and goods cross borders at unprecedented rates may erode any advantage for population health. A future influenza pandemic may well be very damaging to the international economy, especially if its epidemiology resembles the pandemic of 1918. The SARS case suggests that how governments respond to a pandemic can greatly affect social and political stability. International security could be compromised if peacekeeping operations are interrupted or if governments resort to deliberately stoking sectarian tensions to detract from state failures. Governments should thus increase public health expenditures, increase capacity in developing countries through monetary aid as well as knowledge and technology transfer, strengthen national healthcare surge capacity while balancing influenza preparedness investments with other important infectious disease programmes, and improve risk communication skills and ties with civil society groups.

Part IV, 'Accessing Affordable Medicines', takes up the issue of HIV/AIDS and the governance and human rights aspects of accessible medicine. In Chapter 8, 'Coming to Terms with Southern Africa's HIV/AIDS Epidemic', Hany Besada examines the demographic and economic impacts of HIV/AIDS in Swaziland, Botswana, Zambia, Zimbabwe, and South Africa. These countries have some of the highest HIV/AIDS prevalence and associated mortality rates in the world. However, their governments have largely failed to reduce social determinants of disease transmission and increase access to antiretroviral treatment (ART) for those infected. Besada reviews individual governmental policy responses to the HIV/AIDS crisis, with a primary focus on South Africa, where HIV/AIDS-related mortality is likely to continue to increase. South Africa shows how inconsistent political leadership can be a major impediment to disease control. The most prominent indicator of poor domestic health governance is the consistently low percentage of individuals living with HIV receiving ART, despite concessions by large pharmaceutical companies that have allowed the country to manufacture low-cost generics domestically. There is also a government failure to reduce the social stigma associated with HIV infection. Yet there have been positive developments, such as the decisions of large firms to absorb the cost of ART for HIV-positive employees and a national HIV/AIDS policy emphasising prevention. While governments should re-evaluate what strategies have worked in the regional context, the international community must increase its financial aid to southern African states to subsidise the rising cost of treatment resulting from increased access to ART. It must also accept some responsibility for the migration of healthcare workers from southern African states to wealthier countries and offer some solutions.

In Chapter 9, 'The Renovation of Institutions to Support Drug Access', Jillian Clare Cohen-Kohler asks how governments can maximise conditions for positive health outcomes at the same time as economic growth is supported through trade and incentives for the private sector, such as through the application of rigorous intellectual property law regimes. She argues that the potential tension between these objectives arises in the pharmaceutical sector. In a world that has distorted drug access and where one third of the population lacks regular access to medicines, there is a morally compelling reason to identify potential institutional obstacles to drugs irrespective of the potential commercial or budgetary costs. Governments should not experience any conflicting pressure when they design policies to improve drug access. Access to medicines should be viewed as a fundamental human right as expressed in international human rights law that places attendant obligations on states to ensure drug access. Article 12 of the UN's International Covenant on Economic, Social, and Cultural Rights outlines the 'right to the highest attainable standard of health', which includes the right to the availability of essential medicines as defined by the WHO.

In Chapter 10, 'Global Health Governance from Below: Access to AIDS Medicines, International Human Rights Law and Social Movements', Lisa Forman explores the actual power of the human right to medicines to enable access to ART for millions of people with HIV and AIDS throughout the world. She argues that the right to health in international law holds a transformative potential to overcome the political and

economic obstacles to access posed by the Agreement on Trade-Related Aspects of Intellectual Property (TRIPS) set out by the World Trade Organization (WTO), the contestation of price reductions by multinational pharmaceutical companies and their host governments, and governments' denial of AIDS medicines. In South Africa primary human rights battles over AIDS medicines show the contingent legal, social, and political variables that can determine the efficacy of this right. Using international legal compliance theories that debate whether actors comply with norms because they are coerced or persuaded into doing so, Forman suggests that the persuasive power of this right derives from its normative status in international law, amplified by rights discourse, advocacy, social mobilisation, and the devastating consequences of HIV/AIDS. However, rights-related persuasion is less effective and public coercion is necessary where powerful actors have entrenched economic or political interests. While litigation is a traditionally coercive legal tool, public pressure and moral shaming can be similarly coercive. When actors can maximise both the coercive and persuasive force of the right to medicines, they may be able to overcome legal and political obstacles to access.

Part V, 'Conducting Campaigns against Chronic Illness: Polio and Tobacco', begins with Chapter 11 on 'Rotary International and Eradicating Polio'. Robert Scott, Wilfrid Wilkinson, and John Eberhard use Rotary International's longstanding global polio eradication efforts to illustrate how community service organisations can be major agents of change. The global polio eradication movement began in the 1950s with the development of two safe, effective, inexpensive vaccines. Since then great strides have been made through a collaborative effort involving multiple actors from several disciplines. The global eradication of a dreaded childhood disease now appears within reach. Rotary International, a large network of community service organisations composed of business and professional leaders from various backgrounds, has managed successfully to keep polio eradication on the agenda of governments for more than 20 years. Rotary's PolioPlus programme, established in 1985, has raised hundreds of millions of dollars to fund immunisation campaigns in 125 countries and mobilised more than 1 million volunteers. Rotary has successfully partnered with governments, UN agencies, and multilateral organisations. Through networking and its capacity to cooperate, it has kept political apathy at bay and kept the issue of polio on the agendas of individuals who have the ability to influence outcomes.

In Chapter 12, 'Globalisation and the Politics of Health Governance: The Framework Convention on Tobacco Control', Jeff Collin and Kelly Lee focus on the Framework Convention on Tobacco Control (FCTC), the WHO's first attempt to exercise its authority to negotiate an international public health treaty. While the final text of the convention provides a more impressive policy template than many health advocates had expected, the significance of the FCTC lies primarily in the process of its negotiation. The chapter examines the political dynamics of the FCTC, highlighting the leadership role of developing countries, support among international organisations, a partial opening to civil society, and the efforts of tobacco companies to influence the process. The FCTC constitutes an explicit response to globalisation

and an implicit attempt to regulate the conduct of transnational corporations. It thus has broader implications for global health governance.

Part VI, 'Defining Future Directions in Global Health Governance,' turns from case studies to the general issue of governance. In Chapter 13, 'Forging the Trade Link in Global Health Governance', Benedikte Dal, Laura Sunderland, and Nick Drager argue that to effectively manage health risks that spill into and out of national borders, domestic health planners must work in tandem with their counterparts in foreign affairs and trade to attain policy convergence. Only through international cooperation and collective action can governments seek to address the multiple and inherently complex public health risks in an increasingly globalised world. As international trade is a major amplifier of public health risks across borders, states must develop robust population health policies prior to their integration into trade organisations and agreements. Responses to global health challenges increasingly require expertise in several disciplines. Multiple actors with often competing interests must be persuaded to reconcile their differences so that effective policies designed to mitigate health risks may be developed. Thus the emerging new discipline of health diplomacy is urgently in need of development. The concept and processes of health diplomacy are illustrated by the Intergovernmental Working Group on Public Health, Innovation, and Intellectual Property (IGWG), a body formed in 2007 to facilitate the work of the WHO's Commission on Intellectual Property Rights, Innovation, and Public Health (CIPRH). The IGWG is an example of how evidence-based trade and health policy convergence can be attained through an inclusive and cooperative process, based upon the principles of trust and transparency, and the inclusion of performance measures to permit ongoing evaluation.

In Chapter 14 'Explaining Compliance with G8 Health Commitments, 1996–2006', John Kirton, Nikolai Roudev, Laura Sunderland, and Catherine Kunz examine why plurilateral and informal soft law bodies such as the G8 increasingly work with traditional international organisations to advance pressing international health issues. Beginning in the 1980s the G8 began to involve itself in health issues because of the growing vulnerability of its members states to emerging and re-emerging infectious diseases, and a shared perception that the WHO was an ineffective leader in addressing global health challenges. The authors outline several schools of thought on the role of the G8 in strengthening global health governance, explain why G8 members comply with their respective health commitments, and identify how G8 leaders can craft their commitments in ways that improve compliance, by setting a one-year timetable and involving the WHO.

In Chapter 15, 'Global Health Initiatives: A Healthy Governance Response?' Caroline Khoubessarian argues that official development assistance shortfalls and an under-funded WHO are the primary drivers of global health initiatives, such as funds set up through international organisations or large private foundations that typically focus on the prevention, control, or eradication of specific diseases. The successes of initiatives such as the International Campaign to Ban Landmines and the Jubilee Debt Campaign demonstrate that broad coalitions working outside of the traditional system can bring about positive change. Khoubessarian identifies

the strengths and weaknesses of global health initiatives as a means of addressing global health problems. These initiatives have proven to be one way of building and engaging broad multi-layered networks. They may develop into effective global health governance if states are willing to support them through sustained funding. However, global health initiatives place specific single-issue initiatives in competition with one another for funding and attention, and mirror governments' fixation on crisis management as opposed to developing collaborative, long-term public health strategies. These concerns need to be addressed before such initiatives can be viewed as global health governance structures worthy of emulation.

Part VII concludes with Chapter 16, 'Innovation in Global Health Governance', by John Kirton and Andrew Cooper. It draws out patterns from the preceding 14 chapters. It begins with the challenges brought by globalised health threats and then examines the responses of the various public actors now involved in global health. It explores the innovations that have arisen in these responses to the new challenges. It concludes by assessing the responsiveness of the current system of global health governance and its possible transformation into a post-Westphalian form.

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