

Chapter 9

Diplomacy and Global Health Security

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Reader's Guide

This chapter discusses the concept of global health security, the key challenges it raises and the role of diplomacy in addressing them. It begins by outlining an expanded understanding of security, describing the concept of health security, including the dual aspects of societal **health security** and individual, or personal, health security. The political context is also described. Key issues in societal **health security** are then outlined, including significant threats and current responses. Threats covered include the emergence of infectious diseases that cross the species barrier from animals to humans, climate change, the deliberate use of disease-causing agents and the growing burden of non-communicable diseases. Current approaches to addressing threats to societal **health security** are discussed, along with the role to be played by international affairs. The chapter then describes key issues in individual health security, including reliable access to medicines and other health-related products and services; and the politically and economically sensitive determinants of access. The chapter then discusses how to ensure stronger global **health security** in the future.

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Learning Points

- Health security—protection from threats to health—is an important human security issue.
- A series of emerging infectious diseases have challenged global **health security** and economic stability.
- Stronger **health security** requires an understanding of the determinants of infectious and non-communicable diseases and how and where intervention can decrease risks.
- Access to health care depends on a variety of factors ranging from effectiveness of health systems and the cost of medicines to the role of governments providing health care.
- The **Oslo Ministerial Declaration** stresses the convergence between foreign policy concerns for security and economic stability and global health issues.

Introduction: What Is Global Health Security and the Role of Diplomacy?

Security can no longer be narrowly defined as the absence of military threat from another state, as it was in the days when Adam Smith wrote his treatise on the duties of a government (Smith 1776). **Health security**—protection from threats to health—is now recognized as an important non-traditional security issue. The global impacts of **pandemics**, the rise in counterfeit medicines, the role of health provision in post-conflict environments and the centrality of improving universal access to effective health care to economic development are all examples of the growing intersection between global health issues and other dimensions of **human security**.

Health security as broadly defined has both a societal and an individual aspect. At the societal level, global **health security** means reducing collective vulnerability to global public health threats, both immediate and gradual. These threats often go beyond or transcend borders and may be caused by infectious agents that emerge naturally at the human/animal interface, but they may also be caused by chemicals, toxins and radiation, or be deliberately caused by acts of terrorism. The steady and increasing rise in non-communicable diseases also constitutes a threat to societal **health security**. Moreover, reducing vulnerability means, not only combating the disease threats themselves but also addressing their determinants, some of which may also transcend borders, such as international trade and other economic policies that influence the emergence and spread of disease.

At the individual level, **health security** must include protection and provision measures such as access to safe and effective medicines, vaccines and medical care. Increasing personal **health security** thus means providing individuals with more sustained—and therefore secure—access to quality medical goods and services.

Policies and strategies that are developed to address **health security** issues arise within a broad political context. Governance and policies in sectors outside health, such as agriculture, trade, finance, national security or defence, can have significant effects on health outcomes. Likewise, action aimed at improving **health security** can affect other sectors. For these reasons, when **health security** issues involve trans-border events and become international, they can encounter serious difficulties in bilateral relations, at international organizations and in diplomatic negotiations because of a divergence of political, economic or social interests among states, and between states and non-state actors. As examples: efforts to combat counterfeit, falsified and substandard medicines—which pose a significant danger to health—have been hampered by the lack of a consensus definition of counterfeit as it pertains to medicines. This in turn risks becoming embroiled in controversy over which institutions should have how much authority over the problem because issues other than health protection, such as trade, intellectual property and the fight against organized crime, are also at stake. To enable medicines and vaccines to reach those who need them, it is often necessary to address barriers such as trade, regulations and intellectual property rights. Responses to the threat or consequences of chemical and biological terrorism must involve not only public health but also national and international security and crime prevention agencies.

Health security is an important foreign policy and diplomatic concern that is both influenced by and affects decisions on national security, economic well-being, international development strategies and the protection of human dignity. Finding sustainable solutions to global needs in **health security** thus requires better understanding and collaboration between the international affairs and global health communities to achieve effective policies.

Societal Health Security: Threats and Responses

Over the last 15 years, there has been a series of emerging infectious disease threats that demonstrate the collective challenges for global **health security** (Table 9.1).

The majority of emerging infections such as these occur at the animal/human interface, when an infectious agent in animals breaches the species barrier to infect humans (Table 9.2). Their potential for international spread is great in today's world that is increasingly interconnected by extensive and rapid transportation links.

The economic fallout from events such as the Severe Acute Respiratory Syndrome (**SARS**) and H1N1 (swine flu) clearly illustrate the dimensions of **health security** beyond the health sector, involving trade, tourism, and agriculture where costs from trade embargoes or culling of livestock can be significant (Fig. 9.1).

Table 9.1 Infectious disease threats that demonstrate global health security challenges

Year	Disease	Background	Challenge	Reference
1997	H5N1	Has remained a pandemic threat since it was first identified in humans in 1997	Continued, longer-term threat to collective security over decades	Van Kerkhove et al. (2011)
2000	Leptospirosis	International sporting event through the Malaysian jungle which resulted in thirty-three cases across seven countries	Trans-border spread of infection across countries	Sejvar et al. (2000)
2000–2001	Meningococcal disease	Mass gathering at annual Hajj in Mecca	Trans-border spread of infection across countries	Memish and Ahmed (2002)
2003	SARS	First global epidemic of twenty-first century that originated in SE Asia but spread rapidly, emphasizing global inter-connectedness	Rapid, global spread of an infectious agent that crossed the interface between humans and animals	Donnelly et al. (2004) and Woolhouse et al. (2005)
2009	H1N1	Influenza virus originating from swine in Mexico	Global need for vaccines and anti-viral medicines to insure against collective risk	Fraser et al. (2009), Wallinga et al. (2010)

Table 9.2 Selected infectious agents in animals that have breached the species barrier to infect humans (adapted from Woolhouse et al. 2005)

Infection	Animal linked to transmission	Year infection first reported
Ebola virus	Bats	1977
HIV-1	Primates	1983
<i>E. coli</i> O157:H7	Cattle	1982
<i>Borrelia burgdorferi</i>	Deer	1982
HIV-2	Primates	1986
Hendra virus	Bats	1994
BSE/vCJD	Cattle	1996
Australian lyssavirus	Bats	1996
H5N1 influenza A	Chickens	1997
Nipah virus	Bats	1999
SARS coronavirus	Palm civets	2003
H1N1 Influenza A	Swine	2009



Fig. 9.1 Estimated cost of recent emerging infections

The causes of the emergence of infectious diseases are found in a complex web of determinants that facilitate the passage of infections through and across species. Health security responses must go beyond surveillance and early warning systems to address the ecosystem and the interaction between humans and animals. The proximity of domestic animals to and their interactions with both wild animals and humans are good examples of issues that need further examination. The free range of animals in human communities have been linked with transmission of H5N1 influenza from infected chickens to humans (Van Kerkhove et al. 2011), and human

infections with *Escherichia coli* 0157 have been associated with contamination of meat (Hussein 2007). Infections in workers at slaughterhouses have been shown to occur when domestic animals—infected with microbes from wild animal reservoirs—infect humans involved in their processing. For example, processing of domesticated pigs thought to have been infected with the Ebola Reston virus from its bat reservoir, resulted in infection of slaughterhouse workers and some of the farmers raising these pigs (http://www.who.int/csr/don/2009_02_03/en/). The mixing/intermingling of wild and domestic animals at common water sources and other points of contact have also been implicated in the transfer of infectious agents from wild to domestic animals (Thrusfield 2005).

Severe weather events associated with climate change can have a major impact on the occurrence and distribution of infectious disease. Most of the semi-arid and arid lands of Kenya and other parts of eastern Africa, for example, receive less than 700 mm of rainfall per year. However, periodic, widespread and heavy rainfall that caused extensive and widespread flooding in Kenya, Somalia and Ethiopia in 1998 has been linked to El Niño Southern Oscillation (ENSO) phenomenon, the dominant mechanism driving climatic variability (Nicholson and Kim 1997). These shifts in rainfall patterns caused high levels of rainfall in semi-arid areas where widespread flooding led to the emergence of a larger than usual number of mosquitoes that transmit various types of infection including Rift Valley Fever—a viral disease carried by cattle and other ruminant animals that infects humans, often with a fatal outcome (Anyamba et al. 2001, 2009). Inadequacy of routine veterinary vaccination in the 1990s against Rift Valley Fever had left large numbers of cattle unvaccinated, and when animals and humans were forced to live closer together on remaining non-flooded plains, humans became infected with the virus that was then easily passed from cattle to humans by the higher number of mosquitoes.

Prevailing approaches to the containment of outbreaks caused by emerging infections are often reactive—identifying the infection in humans, then determining the animal source and making efforts to contain infection at both the animal source and in humans. Methods used to contain infectious disease outbreaks such as these include quarantine, a well-known and historic response of isolating those infected, or potentially infected, to prevent onward transmission of an infectious agent; and culling of infected and/or potentially infected animals associated with the outbreak. The phytosanitary conferences of the nineteenth century, where risks to health from infectious disease were addressed alongside risks to trade, were initial multilateral attempts to prevent international spread of infections by increasing measures at borders to prevent the importation and/or breeding of infected animal and insect vectors (Aginam 2002). Newer regimes such as the International Health Regulations (WHO 2005) (IHR) have been developed to serve as a safety net when national detection and containment activities have not stopped disease where and when it occurs. The IHR also require countries to strengthen their national detection and response capacities so that risks of international spread are maintained at a low level.

Box 1 The SARS Epidemic 2002–2003

At the beginning of the twenty-first century, instances of the deliberate spread of anthrax and the **SARS** epidemic placed infectious disease threats squarely within the arena of national security. **SARS** clearly demonstrated the characteristics of infectious diseases that make outbreaks a security threat; a symptomless incubation period which allows the pathogen to spread undetected, the rapid spread made possible by air travel and the public concern heightened by access to immediate information through electronic communication methods (Heymann and Rodier 2004). The rapid global spread of **SARS** also made it clear that public health can no longer be viewed as a domestic concern by any one country but needs to be incorporated into foreign policy (Chan et al. 2010). The epidemic has prompted much discussion on the relationship between infectious diseases and non-traditional security issues and emphasizes the need for a balanced focus on both economic growth and the building of a robust social infrastructure.

Although SARS was not covered under the International Health Regulations (IHR) in force at the time, the rapid spread of **SARS** and the fact that no cure existed caused great public concern and motivated an unprecedented cooperation between countries to quickly identify the causative agent and to contain the disease. The rapid containment of **SARS** can be attributed to global political commitment and evidence-based outbreak control measures such as early detection through surveillance. As a result of the **SARS** epidemic, IHR have now been updated to reflect an interconnected global society (IHR 2005).

Future approaches to societal **health security** must include seeking feasible and cost-effective options that will change the focus of efforts to combat infectious disease threats at the animal/human interface. This entails shifting from emergency response to a more preventative approach focused on addressing the politically and economically sensitive determinants that shape disease emergence and spread as described above.

Stronger **health security** therefore requires an understanding of the determinants at the source of human/animal infections, and how and where intervention can decrease risks. Determinants of emerging infections must be addressed through better regulation of the animal husbandry industry, ranging from water and feed sources to veterinary care, slaughterhouses, marketing and trade. Such measures to increase **health security** require investment and are issues where health and other sectors, including agriculture, trade, and transportation, must work together both nationally through enforceable regulation and internationally through diplomacy that leads to agreed international norms and regulations. Likewise, safeguarding **health security** from the threats posed to it by climate change must involve continued development of the United Nations Framework Convention on Climate Change

(FCCC) and must address the political, economic and other issues linked to climate change and its effect on health security.

Infectious disease threats to societal **health security** can also be the result of the deliberate use of infectious disease-causing agents, or noxious chemical substances. Biological and chemical terrorism present high profile challenges for the public health sector, organizations working on international criminality and international relations. Hoaxes are often perpetrated and can increase the negative psychological and social consequences for health. The social and economic costs of prevention and response can also be considerable. Threats from chemical and biological terrorism and warfare are currently addressed through diplomatic interaction and unified action under the Chemical Weapons Convention (CWC) and the Biological Weapons Convention (BWC), respectively (CWC 1997; BWC 1972).

In addition to infectious diseases, non-communicable diseases, responsible for 60% of deaths globally (Zarcostas 2010), are also an increasingly important threat to health security, with some of the same cross-sectoral determinants and implications as infectious diseases. The underlying cause of the growing epidemic of non-communicable diseases is the rise in lifestyle-related risk factors linked to social and economic changes, which has been given momentum by the globalization of many countries.

Effectively tackling non-communicable diseases and their key risk factors—bad diet, lack of physical activity, use of tobacco and alcohol—requires addressing politically and economically sensitive determinants on a societal level, from national transportation and food labelling policy to international trade agreements and transnational food and beverage marketing. The Framework Convention on Tobacco Control is an example of collective activity to combat advertising and promotion of goods that are harmful to health and linked to non-communicable diseases. Such conventions are negotiated through skillful diplomacy that navigates through concerns of various sectors such as industry and trade, communication and agriculture. Intergovernmental action on other determinants of non-communicable diseases is beginning, with member states of the World Health Organization placing special attention on addressing non-communicable disease determinants such as diet and physical activity; the harmful use of alcohol and the marketing of food and non-alcoholic beverages to children.

Individual Health Security: Threats and Responses

Individual **health security**—including reliable personal access to medicines, vaccines, other health-related products and health care—is not as readily recognized as an issue of **health security** compared to high-profile cross-border infectious disease outbreaks.

However, it clearly provides **health security** to individuals in that their health needs can be met and managed. It has been postulated that providing access to health care, especially in post-conflict situations, also adds to stability and thus national security, but research attributing increases in stability to access to health care is limited (Pavanello and Darcy 2008).

Access to health care and the medicines and vaccines necessary for promoting health depends on a variety of factors ranging from the effectiveness of health systems and the cost of medicines and health products to the engagement of governments in providing resources for health care. For vaccines, development agencies were able to justify childhood vaccines as a cost-effective investment over 30 years ago, and the purchase of vaccines and equipment necessary to store vaccines at cold temperature—along with needles and syringes for their administration—has steadily increased since then with the advent of the WHO Expanded Programme on Immunizations (http://www.who.int/immunization_delivery/en/). Recently, access to newly developed vaccines has also been increased for the poorest countries through the Global Alliance on Vaccines and Immunizations (GAVI), and through targeted disease programmes such as those for polio and measles (<http://www.polioeradication.org/> and <http://www.measlesinitiative.org/>, respectively). But sufficient funds have not been made available to fully introduce and sustain provision of newer vaccines such as meningococcal A conjugate vaccine and the human papilloma virus vaccine that prevents infection and the long-term sequelae of cervical cancer. Recent attempts to increase access to influenza vaccines have had limited success in ensuring provision of **pandemic** influenza vaccines when the next influenza **pandemic** occurs, and diplomatic efforts continue to focus on this issue through an intergovernmental process facilitated by the World Health Organization (Fidler 2010).

During the past 10 years, as a result of arguments made by the Commission on Macroeconomics and Health, and other initiatives, the availability of some existing medicines to developing countries has increased significantly as a result of the proliferation of new funding mechanisms, particularly those targeted at specific diseases (see Box 2). However, the current financing architecture does not systematically provide access to medicines for neglected tropical diseases, but pharmaceutical companies donate medicine for some of them, such as onchocerciasis, leprosy and lymphatic filariasis. Similarly, there is no established equivalent mechanism for providing access to medicines for preventing or managing such non-communicable diseases as chronic pulmonary obstructive disease, heart disease, diabetes and cancer. This, together with the weakness in national health systems in many low- and middle-income countries, presents a significant challenge to individual **health security** in developing countries, where the non-communicable diseases are increasingly becoming a health threat.

Box 2 The Commission on Macroeconomics and Health, the G8 and Access to Medicines

For many decades, development agencies focused their attention on improving access to childhood vaccines. But in 2001, the report of the WHO Commission on Macroeconomics and Health made the case for investments in health as a contributor to economic growth (WHO 2001), using examples such as malaria, which is estimated to kill 1 million children under the age of 5 each year, and to cost sub-Saharan Africa at least \$12 billion annually. Together with other studies, and discussions through the G8 and other diplomatic fora, the Commission provided justification for action to improve access to medicines, both in targeted multilateral and bilateral development support, for several high mortality infectious diseases for which no effective vaccines exist. The result has been the creation of the Global Fund to fight AIDS, TB and Malaria (The Global Fund), with increasing multilateral funding, and UNITAID, which provides funding for the purchase of medicines through an innovative tax levy on international air tickets. Bilaterally, funding has increased for the purchase of medicine through such programmes as the President's Emergency Relief Plan for AIDS Relief (PEPFAR) and the President's Malaria Initiative (PMI), which also provide funds to strengthen health systems (PMI 2005). Funds and initiatives such as these have addressed the **health security** needs for three infectious diseases—AIDS, TB and malaria and through the Global Alliance for Vaccines and Immunization (GAVI), provide newer vaccines for childhood diseases. It remains to be seen whether the Global Fund, GAVI and UNITAID are sustainable and able to meet increasing needs and challenges in the long term, or whether other, more sustainable mechanisms that are less reliant on donor must be developed.

Another challenge to increasing **health security** through provision of medicines and vaccines is weak regulatory agencies and the increasing problem of substandard medicines and vaccines, which can contain insufficient amounts of active ingredients to be effective, or can contain harmful ingredients. Substandard medicines are those that do not meet national regulatory standards of quality, efficacy and safety and can be substandard either unintentionally or deliberately. The latter category includes drugs that have been produced outside the legitimate supply chain—that have not been submitted to regulators, that misrepresent themselves as to use, identity or source, or pass themselves off as brand name medicines (using counterfeit trademarks). Globalization, through a widening of the drug-manufacturing base, has created threats for the legal supply chain, but also facilitates opportunities for the production of illegitimate medicines. The challenge can be illustrated in the finding that in Southeast Asia in 2007, one in two tablets of artemunate, an anti-malarial drug, were substandard, some with counterfeit trademarks, others falsified or fake in other aspects (Newton et al. 2008). Responses to substandard medicines include strengthening of national regulatory agencies and enforcement, and a criminal response that crosses international borders, involving law enforcement and multilateral support from agencies such as INTERPOL.

One of the most challenging contexts for increasing access to medicines, vaccines and health services occurs in post-conflict situations and after natural disasters such as earthquakes and widespread flooding. In such contexts, delivery of health services is complicated by the multiplicity of responders and challenges of coordination to ensure local needs are met. In post-conflict situations, the challenge is amplified by controversies regarding the legitimacy of warring forces, NGOs and donors in providing such services, but successes do occur. In Afghanistan in 2007, for example, when there was a noted reduction in access to vaccination programmes, the International Federation of the Red Cross (IFRC) successfully negotiated with the Taliban to gain permission for health workers to enter Taliban-controlled areas to conduct Health campaigns in areas where there had been a marked decrease in access to medicines and vaccines (WHO).

Ensuring Stronger Global Health Security

Over the past decade, recognition of the relationship between global **health security** and international affairs has increased. For instance, the 2007 **Oslo Ministerial Declaration** on Global Health and Foreign Policy, in which ministers of foreign affairs of Brazil, France, Indonesia, Norway, Senegal, South Africa and Thailand pledged to bring health issues more strongly into foreign policy discussions and decisions, recognized health as one of the most important, yet still broadly neglected, long-term foreign policy issues of our time, tying it to the environment, trade, economic growth, social development, national security, human rights and dignity (Lancet, 2007).

Box 3 The Oslo Ministerial Declaration and Global Health Security

The Oslo Ministerial Declaration, a product of the Global Health and Foreign Policy Initiative launched in September 2006 by the foreign ministers of Norway, Brazil, France, Indonesia, Senegal, South Africa and Thailand, gave impetus to the current thinking on global health security. The ministers pledged to build cooperation for global **health security** by strengthening the case for collaboration and brokering broad agreement, accountability and action. The Declaration defined national **health security** as relating to “defence against internal and external public-health risks and threats”, making reference not only to protection against trans-border infectious disease risks, but also to ensuring access to medicines and health services. It regarded global **health security** as an area that encompassed diplomacy, governance, development, poverty, trade, conflict and disaster preparedness and response, and the ministers pledged to integrate health impact assessments into key elements of their foreign policy and development strategies. In this sense, the economic and security focus of foreign policy become concerns for global health, and the focus of global health becomes a concern for the economic and security concerns of foreign policy. In general terms, examination of global health issues from an international affairs perspective permits a focus on their political and economic determinants and implications.

Some interventions to improve global **health security** have the added attraction of supporting broader security efforts. This may include the stabilization of demography through the provision of family planning; the enhancement of economic growth through healthy working environments, and the legitimization of government because it provides health services.

Investments in global **health security** can have outcomes that are both economic and social. As previously noted, there has been much discussion of whether these investments can promote stability, particularly in post-conflict settings. Little research has been done in this area, reflecting the traditional status of sectors such as health and education as low priorities in reconstruction efforts. But experiences in post-conflict countries have underscored the importance of delivering health assistance and rebuilding health sector capabilities as a key part of recovery from conflict. Health sector investments are viewed by some as a bridge to peace; a form of diplomacy aimed to build trust between communities and actors. This is currently played out by a variety of actors, such as the NATO sponsored International Security Assistance Force (ISAF) in Afghanistan, where strengthening national health services is one of its priorities. International affairs reflect an enduring interest in security and prosperity.

Conclusion: Developing a Wider View of Health Security

Health security is much more than the prevention and control of infectious diseases that cross international borders. Infectious disease has been seen as the archetypal **health security** threat and remains the primary concern of national governments, as evidenced by the national security strategies of the G8 countries in initiatives such as The Global Health Security Action Group (GHSAG), and multilateral agreements such as the IHR (2005). NCDs, on the other hand, represent a higher burden of disease at the global level across all ages, but they are often viewed as too indirect, or their emergence too slow, to be viewed within the reactive politics that tend to dominate security discussions. Inequality in access to medicines, vaccines, other health-related products and health services, and the problems associated with substandard medicines are less evident **health security** threats than cross-border infectious disease outbreaks, but threats in this area can be expected to surface in the future.

The financial crisis of 2008 has put pressure on donors to spend health development funds elsewhere, threatening global access mechanisms such as GAVI and the Global Fund. Work must be done to develop sustainable financing mechanisms suitable for high-volume, low-margin markets to improve access in as many developing countries as possible, while ensuring that substandard medicines and vaccines can be detected and kept to a minimum. The High Level Taskforce on Innovative Financing for Health in the United Kingdom came to the conclusion that the bulk of long-term funding of health systems, which are necessary to support efforts to improve health security, had to come from domestic mobilization (Fryatt et al. 2010).

Both technical and political skills will be necessary to accomplish these goals and to strengthen and maintain global health security.

Questions

1. What is security?
2. What is global health security?
3. What kind of cross-sectoral tensions can arise in diplomacy for global health security?
4. How sustainable/effective are current approaches to enhancing global health security?
5. What challenges arise in delivering **health security** in post-conflict and fragile states?
6. How can global health diplomacy ensure better global health security?

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