Review

The nature of international health security

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Health issues occasionally intersect security issues. Health security has been viewed as an essential part of human security. Policymakers and health professionals, however, do not share a common definition of health security. This article aims to characterize the notions of health security in order to clarify what constitutes the nexus of health and security. The concept of health security has evolved over time so that it encompasses many entities. Analyzing the health reports of four multilateral organizations (the United Nations, World Health Organization, Asia-Pacific Economic Cooperation, and the European Union) produced eight categories of most significant relevance to contemporary health security, allowing comparison of the definitions. The four categories are: emerging diseases; global infectious disease; deliberate release of chemical and biological materials; violence, conflict, and humanitarian emergencies. Two other categories of common concern are natural disasters and environmental change, as well as chemical and radioactive accidents. The final two categories, food insecurity and poverty, are discussed less frequently. Nevertheless, food security is emerging as an increasingly important issue in public health. Health security is the first line of defence against health emergencies. As globalization brings more complexities, dealing with the increased scale and extent of health security will require greater international effort and political support.

Key Words: security, health security, globalization, emerging disease, infectious disease

WHAT IS HEALTH SECURITY?

The concept of health security was first described by the United Nations in 1994.[1] Thereafter, many references have used "health security" to depict health issues that have a significant influence on human security.[2-5] Widely used related terms include public health security, global health security, international health security, and global public health security.[3,6-9]

Despite the concept's widespread use, its definition and scope have not been well developed. Not all health problems raise security concerns. Only in certain circumstances do the health and security domains overlap. Recently, emerging infectious diseases and bio-terrorism have incurred extensive attentions on health security.[2,10,11] In particular, globalization helps pandemic diseases spread quickly;[6] thus, we need to consider the damage and other consequences that globalization may have on international health security. The impact of such threats covers a broad range of divisions beyond public health issues, including trade, tourism, agriculture, transportation, and retail. For example, the outbreak of Severe Acute Respiratory Syndrome (SARS) in 2003 reduced consumer confidence tremendously, which was reflected through an obvious decline in service demand. Over the past decade, policymakers and health workers have increasingly recognized the deleterious influences that health crises may have on national, regional, and even global interests.

Health security cannot be fully achieved without international cooperation, especially in cases of emerging infectious diseases.[7,8] Multilateral organizations play very important roles as coordinators, planners, fundraisers, as well as prosecutors of health action and services.[9] Their bulletins have become important for a in the raising of policy priorities and the renewal of strategic profiles for health issues.[10] It is essential to realize the principles of international organizations in health security for plotting better management plans. In this article, the authors summarize the characteristics of health security by analyzing health reports of four well-known international organizations: the United Nations (UN), World Health Organization (WHO), Asia-Pacific Economic Cooperation (APEC), and the European Union (EU).

HEALTH SECURITY, AS DEPICTED BY THE UN

The UN, founded in 1945, is an international organization aimed to facilitate international cooperation in law, security, economic development, social progress, human rights, and achieving world peace. In 1994, UN Devel

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opment Programme (UNDP) sketched out the concept of health security in the Human Development Report.[1] Afterward the Commission on Human Security (CHS) outlined the extent of health security in 2003.[11]

UNDP

In 1994 the UNDP first linked human security with the dual freedoms from fear and from want. Its announcement, the Human Development Report, shifted the concept of security from nations to individuals.[1] This report provides a comprehensive definition of human security, covering seven main categories: economic, food, health, environmental, personal, community, and political security. It was the first description to correlate health security with human security. In this report, health security is aimed at guaranteeing protection from diseases and unhealthy lifestyles. In developing countries, the major causes of mortality and morbidity come from infectious diseases. By contrast, unhealthy lifestyles contribute to most illness in industrial countries. Furthermore, threats to health security have a more serious impact on the poor, on women, and on children. Some of these diseases are preventable or curable with existing technologies and resources.

Commission on Human Security (CHS)

The CHS was established in 2001 to help place human security in the mainstream of UN activities. It states that health is not just the absence of disease, but also a state of complete mental, physical, and social well-being, with good health being intrinsic to human security since security is about protecting human lives. Not all health issues, however, are related to human security. The final CHS report in 2003, Human Security Now, named four conditions significantly linked with human security:[11]
(1) scale of disease burden, now and into the future
(2) urgency of need for action
(3) depth and extent of impact on society
(4) externalities that can exert ripple effects beyond particular diseases, persons, or locations

Of many health problems, those considered most germane to human security are:
(1) global infectious disease
(2) conflict and humanitarian emergencies
(3) impoverishment and inequity

DEFINITION OF HEALTH SECURITY SET BY WHO

The WHO, established in 1948, is a specialized agency of the UN system that acts as a coordinating authority on international public health. It defined "global public health security" as "the activities required, both proactive and reactive, to minimize vulnerability to acute public health events that endanger the collective health of populations living across geographical regions and international boundaries".[12] Two WHO reports, World Health Day 2007 and World Health Report 2007, have listed several issues pertaining to health security.

World Health Day 2007: International Health Security[13]

This paper has set up 6 problems as the most important issues to be resolved:
(1) emerging diseases
(2) HIV/AIDS
(3) environmental change
(4) international crisis and humanitarian emergencies
(5) chemical, radioactive, and biological terror threat
(6) economic instability

World Health Report 2007: A Safer Future[12]

This report concentrates on the missions of epidemic surveillance and global public health protection. It explores a range of threats to health security under the framework of the International Health Regulations.[14]
(1) human causes of health insecurity
  • inadequate investment
  • unexpected policy changes
  • public health consequences of conflict
  • microbial evolution and antibiotic resistance
  • animal husbandry and food processing
(2) weather-related events and infectious diseases
(3) other public health emergencies
  • chemical events
  • radioactive events

SCOPE OF HEALTH SECURITY IN APEC AND THE EU

APEC is a forum for 21 Pacific Rim countries to enhance economic growth and prosperity in the region and to strengthen the Asia-Pacific community. There is growing evidence showing that investing in health could benefit economic growth.[15] For instance, outbreaks of infectious disease, such as SARS and avian influenza, have made a profound impact on both the people and the economies of the region. In order to monitor and respond to future emerging and re-emerging infectious disease threats, an ad hoc group, the Health Task Force (HTF), was established in 2004. It was further upgraded to a formal unit, the Health Working Group (HWG), in 2008. The objective of the HWG, which focuses mainly on natural and man-made infectious diseases, is to assess threats posed to APEC members and their regional economies, trade, and security. Health security remains a major concern of APEC.[16,17] The scope of health security in APEC comprises:
(1) HIV/AIDS
(2) infectious diseases
(3) environmental change
(4) international crises and humanitarian emergencies

The EU, established in 1993, is an economic and political union of 27 member states, located primarily in Europe. Its concept of health security covers any threats and emergencies that affect or are likely to affect public health. These threats include medical, chemical, biological, environmental as well as food safety.[18] Meanwhile, as a result of the SARS outbreak, the European Centre for Disease Prevention and Control (ECDC) was established in 2005 with the aim of strengthening Europe's ability to deal with infectious diseases.

COMMON THEMES OF HEALTH SECURITY

The UN, WHO, APEC, and the EU diverge on the specifics of their ideas of "health security". Their definitions, however, do share two major aspects. One emphasizes health issues with potential security implications; in

general, health emergencies should be acute in nature with serious public health consequences and potential cross-border characteristics. The other contains a broader meaning that represents an event that may endanger public health. The following entities are the most common themes that should be included in the scope of health security:

Emerging diseases

Emerging diseases are poorly understood, difficult to treat, and often highly lethal.[19] Several recent events — such as the outbreaks of SARS, avian influenza, and influenza A (H1N1) — suggest that emerging diseases are serious threats to global health security. Other new diseases include Ebola virus, Marburg hemorrhagic fever, and Nipah virus.

Infectious diseases

Globalization exacerbates the spread of infectious diseases.[6] AIDS has become the most dramatic and disturbing example of rapid distribution throughout the world that causes overwhelming social and economic upheaval. More than 40 million people have been infected with HIV. In addition, drug-resistant microorganisms, nosocomial infection, malaria, meningitis, and sexually transmitted diseases are all current medical concerns.

Deliberate uses of chemical and biological materials

Terrorism represents a threat to health security.[2,20] An act of chemical or biological terrorism could range from the dissemination of aerosolized material to food-product contamination. The intentional releases of sarin gas on the Tokyo subway and anthrax in the United States are the two most famous examples in recent decades of attacks using chemical and biological agents, respectively.

Violence, conflict, and humanitarian emergencies

Violence in all forms has been a major threat to health security.[11] In addition to the direct effect of individual harm, violence may lead to fear, coercion, and deprivation of food and health care. Violent events may result from conflicts, wars, crimes, domestic and even self-inflicted violence. For example, terrorists attacked New York City and Washington, D.C., on September 11, 2001, killing nearly 3,000 people and causing a great impact on both local and global economies.

Environmental change and natural disasters

Environmental change may manifest as adverse health outcomes.[21] In 1986, accumulation of carbon dioxide, suddenly expelled from Lake Nyos, suffocated up to 1,800 people. The Indian Ocean tsunami in 2004 killed nearly 285,000 people and displaced millions more. Recently, in 2008, an earthquake in Sichuan injured millions of people.

Chemical accidents and radioactive dangers

The spill, leakage, and dumping of chemicals or radioactive waste occupy a category of threats to health security.[12] For example, dumping of petrochemical waste in West Africa led to several deaths in 2006. The nuclear reactor accident in Chernobyl, Ukraine, in 1986 also belongs in this category.

Food insecurity

Food insecurity is a serious public health problem, causing hunger, malnutrition, eating disorders, chronic non-contagious illnesses, obesity, anemia, micro-nutrient deficiencies, and diseases transmitted by food.[22] In the past, concerns were primarily related to problems with regard to: food access, supply shortages, hunger, and the quality of sanitation services, which are issues rooted mainly in poor distribution of food and a lack of purchasing power. Currently, however, food security's primary focus has been on the factor of health. For example, in 2008 several thousand babies in China suffered acute kidney failure as a result of being fed with melamine contaminated milk formula, resulting in many fatalities.

Poverty

The poor are at great risk of infectious disease; and illness aggravates impoverishment.[11,23] Shortage of food is the main cause for high morbidity and mortality of poor people in undeveloped countries.

CURRENT AND FUTURE CHALLENGES

Health security exists when health emergencies having potential large-scale dangers that can devastate people, societies and economies worldwide. It's imperative to determine the current risk factors, to discard what is no longer significant, and to look for approaches to new challenges. By analyzing the health reports of four multilateral organizations, eight main themes are summarized and the consistencies of scopes are compared (Table 1). At present, pandemic disease is the most significant risk to health security. Infectious pathogens, both new and old, pose a substantial menace to global health. In addition to emerging and infectious diseases, conflicts, terrorism, and humanitarian emergencies are regarded as very

Table 1. Scope of health security discussed by different multilateral organizations

Category	UN	WHO	APEC	EU
Emerging diseases	+	+	+	+
Infectious diseases	+	+	+	+
Deliberate uses of chemical and biological materials	+	+	+	+
Violence, conflict, and humanitarian emergencies	+	+	+	+
Environmental change and natural disasters	−	+	+	+
Chemical accidents and radioactive dangers	−	+	+	+
Food insecurity	−	+	−	+
Poverty	+	+	−	−

important threats by all four international organizations. The other challenges that concern the majority are natural disasters, environmental change, and chemical as well as radioactive accidents. In contrast, food insecurity and poverty are discussed less, perhaps because they often result in only sporadic and non-acute threats to health security.

Although a consensus on its significance to health security has not been reached, food insecurity carries a potential risk to global health. In fact, food security is emerging as an increasingly important issue in public health. Concerns cover not only food quantity but also food quality. Furthermore, policies regarding food security and health security share common principles. Therefore, integrated development of assured access to assets, to employment, to income, and to a reliable food system should be tackled upstream.

In conclusion, health security, an essential part of human security, is a typical example of a non-traditional security issue. It is the first line of defence against health emergencies. As globalization brings more complexities, dealing with the scale and extent of health security will require greater international effort and political support.

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國際衛生安全的本質

衛生議題有時與安全有著不可分之關係。衛生安全雖已被認為是人類安全概念中不可或缺之一環,然而政策制定者與衛生工作者對其定義尚未達成一致的共識。本文之目的為綜整衛生安全的概念與範疇以釐清衛生與安全關連性的因素。衛生安全的概念與時俱進,現已包含多重面向與意涵。在分析四大國際多邊組織(聯合國、世界衛生組織、亞太經濟合作會議、歐盟)的衛生相關報告後,可歸納出八大項目,並依此進行四大多邊組織定義的比對。其中咸認與當前衛生安全範疇最顯著相關的四大項分別為新興疾病、全球性的傳染病、生化物質的人為蓄意釋放、以及暴力、衝突與人道緊急事件。次兩項共同關注的重點為自然災害與環境變遷、及化學與輻射意外。最後兩項較少被討論的為糧食不安全性及貧窮。然而糧食安全已逐漸成為公共衛生安全的重要議題。維護衛生安全為抵禦衛生緊急事件的第一道防線。而全球化導致事件的發生日漸複雜,因此處理愈益嚴重與牽連廣泛的衛生安全議題時,亟需國際社會的共同努力與政治支持。

關鍵字:安全、衛生安全、全球化、新興疾病、傳染性疾病