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Human Security and EU-Japan Cooperation to combat Cross-Border Infection

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Abstract

Infectious disease's control is a global public health good. Some problems occur on a global level and cannot be managed on a one-country basis and multi-national action is therefore required. As for tuberculosis, malaria, and cholera which were considered to already have been eradicated, there is apprehension about a revival even in OECD member states at the current time. The emergence of even more virulent strains of viruses clearly requires more proactive attention to public health and increased funding. It should not be considered as a problem of any individual city or country alone, but as a global problem. The importance of a coordinated political response to unexpected situation is increasingly being recognized hence the focus on prevention of infection and other international public health policies which have been developed by the WHO or international organizations like the European Union.

In this paper, we discuss the importance of international public health policy as it contributes to the 'global public good' from the viewpoint of prevention of cross-border infection. Second, we identify best practices for cross-national information flow, e. g. medical information network of each infection, and consider the human security. Third, this paper aims to contribute to the understanding of what kind of risk management system and governance is required for effective prevention of infections across borders, particularly with regard to political co-operation and policy networking between the EU and Japan.

Introduction

Many people in developed countries probably imagine that tuberculosis, malaria, and cholera were eradicated decades ago. On the contrary, apprehension about revival has been growing in

OECD member states in recent years. The numbers are staggering[1]. The HIV virus which causes AIDS spread rapidly across borders in the 1980s leading to a public health disaster[2]. An estimated 700,000 people were living with HIV in the EU in 2005[3]. Since 2000 variant Creutzfeld-Jakob disease (vCJD) caused by BSE has become a problem on a worldwide scale[4]. SARS (Severe Acute Respiratory Syndrome)[5] began in China but was quickly spread around the world by travelers in 2003. West Nile fever[6], and Avian Flu[7] are posing problems to the international community.

After the 9.11 attack the threat of biological terrorism became a huge media topic and it became clear that the emergence of even more virulent strains of viruses would require a more proactive approach to public health and increased funding. This should not simply be viewed as a problem of an individual city or country, but as a global problem. It is, therefore essential that much greater importance be attached to political action in response to unexpected situations and that international public health policies developed in WHO or international organizations like the IBRD, OECD, and the EU focus on prevention of infection.

The main purpose of this paper is to address the international challenges posed by cross border infection which is now an explosive political issue. We are forced to ask ourselves these 3 questions. In this paper, firstly we will consider how globalization affects public health in the world and shall identify what kind of international public health policy could best contribute to the global public good and ethics. And then, we will go on to trace the historical evolution of global epidemiological surveillance systems, and to analyze how EU-Japan cooperation should contribute to create or strengthen cross-national medical information networks for each infection.

We shall also consider the international public policies which prevent outbreaks of pandemics or international infections. Finally, we will conclude by attempting to outline what kind of risk management system and governance may be necessary for prevention of infection across borders in the future, particularly with regard to political co-operation and policy networking between the EU and Japan. We would like to also consider the global ethics and responsibility to prevent outbreaks or pandemics from viewpoint of "human security"

1. Impact of Globalization on Public Health and Infection

Before going any further, we would like us to think about the following problem. What is the impact of globalization on epidemic infectious diseases? Assisted by increased globalization, infection crosses borders and becomes a global problem which is not manageable on one-country

level. An urgent political response is therefore demanded. Infection is defined as the state where a pathogenic microbe adheres to people's skin and organization membrane which are hosts. Disease occurs due to the multiplication of the infection of microbes. As for tuberculosis, malaria, and cholera which were considered to already have been eradicated, there has even been apprehension about revival in advanced nations in recent years. Why does such a thing break out? What kinds of problems are raised now? What kind of political response will be demanded from now on? Perhaps the most powerful explanation stems from globalization, which is the integration of the world economy through private markets.

According to David Harvey[8] (1990) and David Held[9](2007), globalization is profoundly affecting the world's economy, politics, culture and ideas-virtually all aspects of human life, including health by 'Time-space compression[10]'. Positively, there is a connection with globalization and epidemic expansion among these elements. The cross border infection problem became a subject for discussion of the highest priority of the Denver Summit (G8), APEC meetings in Malaysia in 2005 and the 16th EU-Japan Summit (Berlin) 5 June 2007. In a global era, the following eight points are often mentioned as factors which influence expansion of the infection. (See Table 1)

The disease rate becomes higher as population density becomes higher. Infection spreads more quickly when many people are gathered in a small area. Expansion of the infection birthplace region due to global warming, which is progressing by emission of the carbon dioxide accompanying industrialization etc.

Table 1. Impact of Globalization on Infection

(1) Population problems
(2) Environmental problems
(3) Socioeconomic and development problems
(4) Generating and expansion of drug resistance accompanying medical practice problems
(5) Loss of the public health function accompanying disaster
(6) Rapid increase of aging population in advanced countries.
(7) Increasing movement of people across the borders.
(8) Expansion of international economic discrepancy, and risk expansion of bioterrorism.

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Global warming, causes the air temperature to rise and local climate changes causes the virus to spread more rapidly[11]. The danger of infection increases as the habitat of infection media, such as a mosquito, or bacterial multiplication increases. The possibility that tropical infection, such as those carried by mosquitoes, E.g. dengue fever, West Nile fever, and malaria, will expand to temperate areas is also increasing every year. Destruction of natural environment and expansion of the onset risk of infection is an unfortunate result of increased international development. Moreover, since the risk of coming into contact with the pathogenic media has increased (due to deforestation, increasing agricultural activity and the negative environmental impact of large scale construction projects such as dams) high risk infections as Ebola hemorrhagic fever have become much more common.

Genetic changes have occurred in bacteria which have increased their resistance to antibiotics used to control disease known as MRSA (Methicillin-resistant Staphylococcus aureus). This makes it easier for disease to spread to patients who were admitted for other reasons. For example, there is increasing apprehension about the expansion of infectious following natural disasters, such as the Tsunami triggered by the Great Sumatra Earthquake on 26 December 2004. Problems include collapsed houses and other buildings, the malfunction of water and sewage systems, the difficulty of providing clean drinking water and medical supplies at medical facilities.

Due to the weakening of the immune function caused by aging, rates of infection, development of symptoms, and severity of illness are also increasing. The Japanese now have the highest life expectancy in the world (men-79.9, women-86.4, 2013[12]) and at present approximately 25% of the population are over the age of 65 . The proportion of aged people is increasing in OECD countries every year, so taking

precautions against infectious disease to protect vulnerable elderly populations will become even more important. Due to the rapid progress of extensive and quick means of transport, such as jumbo jet aircraft, persons and goods become movable across borders and infection will continue to expand in connection with this. When people, food, plant, and animal which serve as a. host enter a country, infection can also cross the border easily. Increase to the infection due to deterioration of the sanitary conditions accompanying poverty and war. Various infections including the three major infectious diseases of the malaria, cholera, and tuberculosis can be considered very important subjects from viewpoint of `human security'.

2. Public Health Policies of International Organizations to combat Global Infection

The development of modern surveillance can be traced to 1897, when the states attending the International Sanitary Conference acknowledged the need for international health surveillance. International health regulations (IHR)[13] was established at the time of cholera bread pandemic in the middle of the 19th century. The information on the infection diffused across the border was shared trade or movement of people was restricted to the minimum, and policy aimed at controlling infection expansion was adopted. Along with the Health Organization of the League of Nations (which conducted some surveillance), the OIHP was a precursor of the World Health Organization (WHO) in the field of international monitoring.

With globalization, trade and travel have increased, so too have health threats, that is diseases without borders. In 1948 the WHO was established as a specialized agency of the United Nations which consists of 192 member states) to be responsible for the collection of medical information for the purpose of combating as well as infection, investigation, analysis, and public presentation of information, and setting up the early warning surveillance system against pandemic infections. Increasing speed of spread of epidemics due to demographic changes and globalization. During the swine flu ('the Spanish flu') case in 1918-19, 40 million people died around the world[14]. Asian Flu case in 1957, 2 Million people died when the virus, spread around the world within half a year. Hong Kong Flu case in 1968.

In 2002, SARS spread around the world in 4 to 7 days This case has some co-related elements with globalization and Population density (three times higher

now than in 1957), etc. Disease spreading with faster worldwide travel. According to the report of the WHO international health agreement (international Health Regulations) in 2005, amendment will be performed in 2005 and it will come into force from June, 2007.What is epidemic infection? We would like to give and examine a concrete example of a measure taken by the EU to combat an infection.

3. ECDC as an Organization to control Infection in EU

The EU's health policy competences are limited to public health promotion. Therefore, the EU has been endeavoring to get power to co-ordinate and enhance national health care policies. This has led to a Public Health policy in the EU: Maastricht Treaty (1993.11) 'public health' specified as a policy (EC Article,129)

The main intentions of the policies were: (1)Maintenance of high level health, (2)Prevention of illness including drug addiction, and (3)Incorporation of Principles of 'subsidiarity' and 'proportionality '.

Another legal base was defined in the Treaty of Amsterdam (1 May,1999),Article 152 :the Purpose of 'Public Health Policy' as follows : (1) Formation and Implementation of EU Public Policy 'High Level Health Security', (2) Prevention of Disease, and Removal of Health Risks, Health Enhancement、(3) Prevention of Drug Addiction, (4) Blood, and Blood Related Substance.

New Public health policy is defined in the Treaty of Lisbon (1 December, 2009), Article 168 :

"1. A high level of human health protection shall be ensured in the definition and implementation of all Union policies and activities.

Union action, which shall complement national policies, shall be directed towards improving public health, preventing physical and mental illness and diseases, and obviating sources of danger to physical and mental health. Such action shall cover the fight against the major health scourges, by promoting research into their causes, their transmission and their prevention, as well as health information and education, and monitoring, early warning of and combating serious cross-border threats to health[15]." (TFEU, XIV, Article 168, OJ C115/122)

Furthermore, many administrative Organs, Standard setting agencies for medicines for humans, and administrative regulations were organized. A for the EU

agencies, European Surveillance systems are : (1)European Centre for Disease Prevention and Control (ECDC) [16] ,(2)Early Warming and Response system (EWRS)[17],(3)Medical information System (Medisys)[18],(4)European Programme for intervention Epidemiology Training (EPIET) [19],(5)EU drugs agency (EMCDDA)[20].

ECDC is authorized by the European Parliament and was established under the Council Directive on April 21, 2004(851/2004) and was installed on May 20, 2005. The mission is to offer support for strengthening prevention influenza in Europe, SARS, and infections like HIV/AIDS. In order to show a scientific view of the risk of infection in advance, the ECDC supports the promotion of medical knowledge in Europe. The ECDC has the duty to protect human health through prevention and control of diseases. It is supposed that through the co-operation of relevant international organizations responsibility will be enhanced in the public health field[21]. The ECDC provides the focus for infection control and surveillance, and will be connected with other networks by 'Epidemiological Surveillance' Decision in 24 September, 1998[22]. It has a cooperation system (Early Warming and Response System- EWRS) of with member states, and other international institutions[23].

Recently, 'Medisys' was set up in Canada by the European Commission. It is a system for collecting and disseminating news about the medical treatments and information from academic sources concerning cross-border infections. In fact a website, which member state citizens can access, was set up only last month (July, 2007). Bioterrorism is also with the remit of the system.

The Commission set up a specialist training programme called "European Programme for intervention Epidemiology Training (EPIET). In order to perform surveillance it is necessary to have taken the epidemiology training program. So we can see that there are in place various means of strengthening control over the surveillance and risk management of threats, especially infectious diseases[24].

The discussion then focuses on international surveillance efforts during several periods prior to the 1990s, a time that saw a dramatic increase in concern over emerging and re-emerging infectious diseases.

4. Institutions and surveillance system in Japan

The central role of national surveillance in Japan[25] is assumed by the International Medical Center of Japan (IMCJ) and National Institute of Infectious Disease(NIID) under the revision of "Law Concerning the Prevention of Infectious Diseases and Patients with Infectious Diseases"(New Law on Infectious Diseases) came into force in 2003.

(1) Ministry of Health, Labour and Welfare(MHLW)[26]

(2)International Medical Center of Japan (IMCJ)[27]

(3)National Institute ofInfectious Disease (NIID)[28].

(4)Infectious Disease Surveillance Center (IDSC)[29]

(5) Ministry of Foreign Affairs of Japan (MOFA)[30] and JICA[31]/JBIC[32]

(6)Ministry of Education, Culture, Sports, Science and Technology[33], Universities、
(7)Academic Associations.

The Infectious Disease Surveillance Center (IDSC), which co-operate with the NIID. are basically hospitals where the doctors have a dual function as medical practitioners and academic researchers[34]. The NIDD aims at carrying out research projects on a variety of contagious diseases from the standpoint of preventive medicine, improving human health and welfare by suppressing infectious diseases, and clarifying and supporting the scientific background of health and medical administration in Japan. These functions may be summarized into (1)research activities, (2) reference services for infectious diseases, (3) surveillance of infectious diseases, (4) national control tests and other tests, (5) international cooperation, and (6) training activities[35].

Using the internet and High Definition TV images the doctors are able to observe operations being conducted in other countries and advise local surgeons of the latest information regarding new infections. In a recent case doctors at the IDISC were able to advise surgeons performing an operation at the Bagumai Hospital in Vietnam about how to treat patients with Avian Flu.

In Japan there is a triple layer government system. Firstly, the national level, secondly the regional or district level consisting of 48 prefectures and thirdly, the local level government in each prefecture, an Infectious Disease Surveillance Center is installed in a local health laboratory or similar institution. In all prefectures, cities which contain a health center or a prefectural infection information center basically

act as district information centers. Information from all prefectures in Japan is collected, analyzed, and sent to each prefectural Infectious Disease Surveillance Center.

The NIID collects reports of detection of infectious agents from prefectural public health centers and also reports of incidents of infectious diseases from sentinel clinics throughout Japan, and this information is made accessible to the public. In case of occurrence of an epidemic or outbreak of an infectious disease, epidemiological investigations will be carried out and the information exchanged with infectious disease surveillance organizations in other countries.

At the moment the ‘decision tree’ or ‘chain of command’ to be employed during an emergency is unclear and could lead to confusion. It is extremely difficult for the Prime Minister’s Office to exercise control over the response to an outbreak or a pandemic. In order to remedy this situation, onset planning survey committees responsible for controlling infection at district level will be established in all prefectures and report to the onset trend survey plan committee at central level operated by the Ministry of Health, Labour and Welfare who will conduct infection surveillance investigation and initiate disease limitation strategies. The Ministry of Foreign Affairs provides infection information overseas for Japanese citizens traveling abroad and also Japanese Embassies and foreign local authorities all over the world. However, given the problems presented by the present globalizing era mentioned above we cannot say that the precautions against infectious disease at country level are enough. More non-governmental actors need to become involved.

5. 16th EU'Japan Summit (Berlin) 5 June 2007 . Implementation of the EU-Japan Action Plan Emerging and reemerging infectious diseases

The impact of globalization can be seen in increasing global warming, major shifts in infectious disease patterns and vector distribution, death from heat waves, increased trauma due to floods and storms and worsening food shortages and malnutrition in many regions.

It is necessary to strengthen coordination and information sharing among relevant agencies and specialists both domestically and abroad, and to quickly and accurately

identify the pathogen, carriers, and patients exhibiting symptoms. It is also necessary to identify the characteristics of the pathogen, and develop detection methods, and to enhance and fully support the basic and applied research on prevention, diagnosis and treatment, including the development of vaccines and 'wonder drugs'.

The 16th EU-Japan Summit (Berlin) was held in June 2007. The conclusion was as follows: Objective 1:Promoting Peace and Security " Pursue dialogue on Human Security, focusing on its concrete implementation in a wide range of issues Infectious diseases[36]",

According to this agreement, Collaborative research on the 7th Framework Programme (FP7)[37], the European Commission decided to set a 6.1 billion Euro budget to be spent on co-operative research around the world. EU-Japan collaborative research into Health issues are: (1) Enhanced health promotion and disease prevention, (2) providing evidence of best practices, (3) public health measures, (4) Special focus on life-style,(5)Intervention, mental health, etc. Furthermore, exchange of researchers between the EU and Japan will be increased in future.

6. International Disease Surveillance as a Global Public Good and Impact on Global Ethics and Responsibility

As ethical problems on patient human rights abuse are raised by epidemics, such as HIV/AIDS[38], systems to combat discrimination against patients and their families and to increase understanding of infectious diseases are required[39].

Global ethics issues are evident in the relation between developing nations and developed nations. Infections in developing countries tend to be either not reported or under-reported to the WHO. Such countries are do not want any negative impact on their own economy, particularly trade or tourism which may occur if they are identified as a cause of infection expansion. Prevention of infectious diseases is a global public good, and someone has to entire cost and third world countries become "free riders". In order to avoid the problems associated with this the EU operates a

fund-matching system under which the recipient nations must pay at least a token amount of the cost and thus share a proportion of the responsibility.

(1) Increasing disparities in access to health care between rich and poor.

(2) Human Guinea Pigs generally economically disadvantaged.

(3) Large number of incidences of organ donation for cash in developing countries.

(4) World's poorest at greatest risk of infection by epidemics.

(5) Absence of legal regulations to protect people in developing countries

Communicable diseases are mainly concentrated among the poor in developing countries. Because of the risk of expansion, the control of communicable diseases is considered a public good, which should be publicly funded and certainly the uncontrolled spread of disease would be seen as a "global public bad".

Contrastingly, payment for treatment of man-communicable diseases or injuries is normally considered the private responsibility of the individual. In the era of globalization, health circumstances are so changed that the customary balance between public and private health is shifting and .global health can be considered more a public than a private good.

Johan Giesecke argues that infectious disease surveillance is a global public good as defined by the criteria of 'non-rivalrous' and 'non-excludable'[40]. The International Health Regulations (IHR) makes a strong case that surveillance of infectious diseases constitutes a global public good. Indeed, the 1969 update of the International Health Regulations by the World Health Organization (WHO) marked more than a century of interstate cooperation on the control of key infectious diseases for mutual health protection[41].Thus control of infectious diseases can be considered a global public good.

Conclusion

The surveillance of infection has involved international cooperation for more than 100 years. With more than 1 million people flying across national boundaries every day, many of these new pathogens have the capacity to reach anywhere in the world

within 24 hours. Migration and demographic increases, refugee and displaced persons and rapid population growth all contribute to the problem of infection.

Although the demand for global public goods, such as prevention of infection expansion and prevention of international terrorism, is high and urgent the burden is not shared appropriately and this raises the problem of the "free rider' who enjoys these public goods gratuitously. But supporting vulnerable state and regions is indispensable for global security and if some countries are allowed to avoid their responsibilities, the efforts of all the other countries will be diminished. Considering that the cost of stopping the propagation of "earth public wrongs" is ultimately lower than not stopping them, it is efficient and rational to support the vulnerable state and actor.

Therefore, EU-Japan will take on a global responsibility when they act together to combat infectious diseases and will contribute to global public ethics. If poor countries fail to consider disease prevention as partly their responsibility and refuse to tackle the issue properly, eradication of infection becomes more difficult and may be impossible. It is necessary to conduct international systems for infection eradication using EU-Japan co-operation as a model.

Moreover, the world faces various problems, such as global warming and environmental destruction, and in order to combat these environmental issues, we have to take a holistic approach including economic, industrial, educational, and cultural policies. Effective policy co-ordination will also be required to combat expansion of cross border infection. In order to share medical information about these diseases with ordinary people as well as specialists, the construction of a multi-level international information network will be essential The health care policy networks at international and domestic levels have to be strengthened. Various international public policies and domestic public policies must be co-related efficiently, such as disaster and infection prevention policies.

A sense of urgency has propelled the increase in international surveillance of disease following recognition that epidemic diseases and serious endemic diseases (such as malaria and HIV/AIDS) are much bigger threats than was previously thought. Contemporary infection surveillance has also assumed greater importance due to the greater transparency of states in the information age and the number of organizations engaged in surveillance.

We conclude by discussing how diverse institutional actors, both old and new, might develop more effective mechanisms of international cooperation for global health protection. In some countries "health watches" are being established to bring greater transparency and accountability to public institutions.

Networking is assuming increasing importance in the conduct of global health affairs, as reflected in the exponential growth of health exchanges on the Internet. Networks or alliances among academic and international organizations, for example, could accelerate the political acceptance of scientific facts that Cooper (1989) described as so instrumental in moving self-interested nation states into formal international agreements of cooperation. The growing role of the World Bank in this area is a positive sign (World Bank 1993, 1997) especially the reshaping of their institutional instruments to meet the new challenges of global health.

We recommend that the following steps be taken in the interests of health safety in EU and Japan from the viewpoint of human security.

(1) Adoption of Policies for Medical Risk Management,

(2) Development of Cooperative Relations between Public and Private Sectors,

(3) Public Involvement and Information Sharing for Stakeholders or Public,

(4) Suitable Use of Bio-medical Technology and Advancement of Research,

(5) Strengthening of International Cooperation.

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