

# **Advisory Opinion**

**Measures to prevent epidemics of high-risk  
infectious diseases need to be promoted**



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**Science Council of Japan**

**Subcommittee on Preventing and Controlling Large-scale  
Infectious Diseases, Section II**

This Advisory Opinion is issued in accordance with the outcome of the deliberations of the Subcommittee on Preventing and Controlling Large-scale Infectious Diseases, Section II of Science Council of Japan.

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## Executive Summary

### 1. Backgrounds

In this Advisory Opinion, we provide our views on the issues identified through our analysis of the current situation regarding the response to human infectious diseases that have a high probability of human-to-human transmission, pose a particularly high health risk, and could have a significant impact on local public health if their spread is not prevented. (Hereinafter, this kind of infectious diseases are referred to as high-risk infectious diseases).

In this advisory opinion, high-risk infectious diseases are defined as those with human-to-human infections in infected persons, including asymptomatic pathogen carriers, with a fatality rate of 15% or more and a basic reproduction number  $R_0$ , a measure of infectivity, of 3 or more. This includes newly emerging infectious diseases.

### 2. Current situation and problems and viewpoints

The Government of Japan should stratify high-risk infectious diseases based on their characteristics (infectiousness of infected persons including asymptomatic infected persons, fatality rates, routes of infection, lengths of incubation period, etc.). It should also specify measures (quarantine, isolation, follow-up at home or in facilities, restriction of activities, employment, business, human flow and distribution, vaccination if effective vaccine is available, etc.) for each stratified group. At the same time, it is necessary to establish a system to monitor the Government's restriction of private rights by the Diet, etc., and a system that can take sufficient measures to stabilize people's lives and the national economy.

#### (1) Identification of infected persons and prevention of the infection spread

**Border control measures:** The border control measures have been significantly improved through the revision of the Quarantine Act of 2022. As a result, those entering Japan who are judged to be "persons who may have been infected with infectious disease agents" under the Quarantine Act are subject to severe restrictions on their movements and human rights restrictions. For this reason, the period of restriction on the movement of the entrants must be kept to the minimum necessary. In addition, a mechanism should be established to promptly designate high-risk infectious diseases, not currently specified in the Quarantine Act as quarantinable infectious diseases. Furthermore, information on infected cases identified in the quarantine station should be promptly transmitted to the command post for

infectious disease control in the Government. Additionally, the authority for measures under the Quarantine Act should be transferred to the command post, enabling the Government to take responsibility for securing medical facilities for patients and infected individuals with high-risk infectious diseases, as well as facilities for accommodating and monitoring contacts.

**Management of infected persons:** The 2021 amendment to the Act on the Prevention of Infectious Diseases and Medical Care for Patients with Infectious Diseases (here in after, referred to as “the Infectious Diseases Control Law”) introduced administrative penalties on the patients who 'refused' hospitalization or 'escaped' from in-patient facilities; however, it has been pointed out that this amendment is inconsistent with the principles of this law, leaving an outstanding issue. In the case of high-risk infectious diseases, there may be situations where it is necessary to detain individuals who do not comply with isolation measures; hence the Infectious Diseases Control Law should rather straightforwardly state that patients can be taken into custody and isolated for a period considered medically necessary, to the extent necessary to provide them with protection and appropriate medical care, and to control the spread of infectious diseases. In addition, there should be a system whereby the Government secures the necessary facilities for local municipalities to conduct their quarantine. Necessary legislation should be developed through careful and adequate discussions in normal times.

**Management of contact persons and prevention/mitigation of contact:** For high-risk infections, it may be necessary to impose movement restrictions on asymptomatic infectants and contactees, which could effectively amount to isolation measures, and to take those who do not comply into custody. Restrictions on private rights, such as restrictions on employment and business, may also be necessary. The Government must take into account the stability of people's lives and the national economy, as they are encouraging people to respond voluntarily or forcibly to suppress social contact in order to control the spread of infection. The Government should prepare during normal times so that it can promptly establish a livelihood support system in the event of an emergency, such as supplying residents with daily necessities.

**Restrictions on human flow and logistics to prevent the spread of the epidemic:** Even when regional blocks are set up to restrict the flow of people and logistics, the minimum necessary social and economic activities must be maintained. In order to establish a system that enables the prompt implementation of necessary initiatives, the Government should determine such regional blocks in normal times by the opinions of experts in infectious diseases, human flows and logistics, and establish a wide-area administrative structure within such blocks, which can be coordinated by the Government if the block straddles several prefectures. Restrictions on the flow of people and logistics

must be combined with a system to monitor the infection situation in real time and eliminate them as soon as they become unnecessary.

**Legislation to restrict people flow and logistics between regions:** The Government should collect the opinions of experts and others on the necessary conditions for restricting the flow of logistics and people other than patients and infected persons when high-risk infectious disease cases occur in the country; based on their views, it should prepare a concrete response plan within the constraints of the Constitution. The plan, together with the opinions of Public Health Centres and other public health workplaces, should be presented to the public as risk communication. Listening to public opinions, the Government should make efforts to gain a consensus among the people.

**Legislation on facility use and health-related professions:** Based on the experience obtained through the COVID-19 outbreak, should be established is a system that does not rely solely on Public Health Centres as the competent authorities for infectious diseases in order to respond appropriately to high-risk infectious diseases. Laws and regulations should be specifically revised from the perspective of crisis management and the 'command post' should be made responsible for securing accommodation facilities, adopting, and applying operational methods, and assigning responsibilities of medical personnel engaged in infectious disease control.

**Development of the research system:** In the event that an unknown high-risk pathogen that invades from overseas causes an epidemic, Japan will be responsible for promptly acquiring its entire genome information and disseminating information internationally. It is necessary to improve the current research system in which each ministry, including the Ministry of Health, Labour and Welfare (MHLW) and the Ministry of Education, Culture, Sports, Science and Technology (MEXT), deals with the issue individually.

## **(2) Establishment of communication systems, including information provision on patient isolation, restrictions on movement of residents and others**

When isolating or restricting the movement of infected people to control high-risk infections, there needs to be a system in place to ensure that people who do not speak Japanese or use a non-verbal language for communication can understand the need for these measures without 'barriers'. In addition, the daily life of these individuals cannot be maintained if information on the supply of daily necessities is not communicated without omission or delay. By the unusual situation in which an infectious disease outbreak takes place, individuals' daily activities are interfered. Considerations in communication are not only essential for information sharing to effectively prevent the spread of infection. They also play an important role in maintaining the safe and healthy functioning of the people,



households, and communities that make up society, and even society as a whole. To establish a communication system, it is necessary to have (i) a mechanism to provide necessary information efficiently and to all members of society, (ii) a mechanism enabling society members to secure access to information, and to select necessary information, and (iii) a mechanism to prevent some members of society from being disadvantaged because of communication differences.

## Table of Contents

I. Backgrounds .....	1
A. Introduction .....	1
B. High-risk infectious diseases .....	3
1. Viral infections.....	3
2. Bacterial infection.....	6
II. Analysis of current situation and problems .....	8
A. Identification of infected persons and prevention of epidemic spread .....	8
1. Border control measures.....	8
2. Management of infected persons .....	10
3. Prevention/reduction of contact with infected persons and management of contact persons.....	12
4. Prevention of infection during transfer and transport.....	13
5. Restrictions on human flow and logistics to prevent the spread of infection.....	13
6. Preventing the spread of epidemics by blocking areas.....	15
7. Legislation to restrict people flow and logistics between regions.....	16
8. Institutional issues related to facility use and health-related professions.....	17
9. Research System.....	18
B. Establishment of communication systems including the information provision on patient isolation as well as movement restrictions for residents and others .....	19
1. Mechanisms to efficiently provide necessary information to all members of a society .....	20
2. Mechanisms for access to and choice of necessary information on the part of members of society.....	21
3. A mechanism to prevent some members of society from being disadvantaged because of differences in communication .....	22
III. Opinion .....	24
A. Viewpoints on identification of infected persons and prevention of secondary infections (border control measures, prevention of secondary infections, identification of endemic areas and groups, management of contacts, prevention of epidemic spread by blocking off areas) and on the law amendment based on dialogue with the public. ....	24
1. Border control measures .....	24
2. Management of infected persons and contacts .....	25
3. Prevention of infection during transfer and transport .....	25
4. Restrictions on human flow and logistics to prevent the spread of infection .....	26

5.	Preventing the spread of epidemics by blocking areas.....	26
6.	Legislation to restrict people flow and logistics between regions.....	26
7.	Legislation on facility use and health-related professions .....	27
8.	Development of the research system .....	27
B.	Viewpoints on the establishment of a communication system, including the information provision on patient isolation and restrictions on the movement of residents and others.....	27
	References .....	29

## **I. Backgrounds**

### **A. Introduction**

The experience of the new coronavirus infection (hereafter, referred to as “COVID-19”) epidemic has led to a marked improvement in national and international infectious disease control measures. However, various problems remain in relation to quarantine, information collection on identification and tracking of patients and infected persons, open science and vaccine measures as pointed out by the following two recommendations: i) the Recommendation entitled “Establishment of a Permanent Organization to Prevent and Control Infectious Diseases, which was prepared by Subcommittee on Preventing and Controlling Large-scale Infectious Diseases, Section II of Science Council of Japan”, and was published on July 3, 2020; and ii) the Recommendation entitled “Strengthening the ICT infrastructure and promoting digital transformation for disease control and social transformation”, which was jointly prepared by the Subcommittee on Preventing and Controlling Large-scale Infectious Diseases, Section II of Science Council of Japan, and the Subcommittee on Ubiquitous Situational Awareness and Social Infrastructure of the SCJ Informatics Committee, and was published on 15 September, 2020. In the future, we hope that the problems which are pointed out in this document will be improved thanks to the establishment of the Cabinet Agency for Infectious Disease Crisis Management and Supervision Agency and the National Institute for Health Crisis Management and Research in the Ministry of Health, Labour and Welfare. The National Institute for Health Crisis Management and Research is established for the following purposes: i) prevention and anti-expansion of the spreads of infectious diseases and other emergency situations in which serious public health hazards occur or are likely to occur; and the improvement and promotion of public health in Japan and abroad (adapted from the National Institute for Health Crisis Management and Research Act).

The COVID-19 epidemic revealed the challenges facing humanity today, when human interaction and the distribution of goods and information have increased significantly. The possibility cannot be ruled out that, in the future, climate change and other changes in the habitats of many wildlife species will result in many viruses being transmitted between species as different species come into contact with each other for the first time, leading to the emergence of new high-risk infectious diseases that were previously completely unknown. Regional conflicts are also likely to increase more than ever. During wars, carcasses of animals resulting from shelling and bombing, as well as carcasses of animals that died from diseases caused by the destruction of the environment and wild animal habitats, are left undisposed of. Furthermore, unregulated movement of animals and increased contact between humans and animals--wild and domestic animals--increases the risk of spillover (interspecies transfer of pathogens) and the spread of animal-borne

diseases. This point was also raised in discussions during the process of developing the 24<sup>th</sup>-period SCJ Recommendation entitled "Urgent Recommendations on the Control of African Swine Fever (ASF, formerly known as African Swine Cholera)", which was published on April 16, 2020.

In this new phase of history, where humanity must confront social problems caused by climate change, war, etc., human survival will become more vulnerable not only to infectious diseases but also to terrorism and wars between nations; and a civilizational crisis could easily occur. The health of humans and animals and the conservation of the environment are closely related to each other within the ecosystem, and the aim of true health is to achieve a good overall state of health, in other words, to achieve One Health<sup>1</sup>. In the coming globalised society, common human challenges such as infectious diseases, food insecurity and the environment issues require a global and cross-sectoral approach. Academic information as a common public good of humanity must be shared and disseminated equally, and then opinions must be shared to find a way to realise correct and effective policies.

The plague epidemic of the Middle Ages was feared as the Black Death in Europe, and some estimate suggests that around 60% of the European population died of the disease in the 14th century [1]. It is not possible to discuss this historical catastrophe by applying it to the present day because Europe at that time differed significantly from the present day in terms of the natural and social environment. However, as we have discussed, the new risk of infectious disease pandemics has increased to the point that it cannot be ignored in modern societies, and it is necessary to consider preparedness for infectious diseases with much higher fatality rates than COVID-19. This Advisory Opinion presents the results of our analyses and conclusions regarding the current measures and responses against human infectious diseases (hereafter referred to as high-risk infectious diseases) with a high probability of human-to-human transmission, a particularly high health risk and a significant impact on local public health if their epidemic spread is not stopped.

When facing the extremely high risk of the high-risk infectious diseases considered in this Advisory Opinion, we concluded that there was little room to consider the balance with economic activities at the time of prioritizing measures to stop their spread. We hope that this Advisory Opinion will be helpful when measures to deal with various infectious diseases will be considered by the Cabinet Office Infectious Disease Crisis Management and Supervision Agency and the National Institute for Health Crisis Management and Research in the Ministry of Health, Labour and Welfare.

## **B. High-risk infectious diseases**

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<sup>1</sup> The concept of human and animal health and the health of the environment as One Health and protecting them in an integrated manner.

This section provides definitions of high-risk infections in this Advisory Opinion for viruses and bacteria respectively, as well as examples of high-risk infections caused by viruses and bacteria.

## 1. Viral infections

The Act on Prevention of Infectious Diseases and Medical Care for Patients with Infectious Diseases (hereafter referred to as the Infectious Diseases Control Law) classifies infectious diseases that are 'extremely high-risk from a comprehensive perspective based on infectivity and the severity of the illness' as Category I infectious diseases. Category I infectious diseases caused by viruses are Lassa fever, Ebola haemorrhagic fever, Crimean-Congo haemorrhagic fever, Marburg haemorrhagic fever, South American haemorrhagic fever, and smallpox. Note that Ebola haemorrhagic fever is often referred to internationally as Ebola virus disease as patients do not always present haemorrhagic symptoms. This disease will be referred to as Ebola virus disease in this Advisory Opinion [2].

According to the Infectious Diseases Quick Reference for "Viral Haemorrhagic Fever" of the Infectious Diseases Society of Japan, the fatality rates for all of the Category I infectious diseases is 15% or more, with Ebola virus disease having the highest fatality rate among these, at 25–90%[3]. However, the infectivity of most Category I infectious diseases is not high enough to cause an explosive epidemic in a brief time.

One indicator of transmissibility is the basic reproduction number ( $R_0$ ).  $R_0$  is an estimate of the average number of secondary infections caused by a single infected person in a population without immunity to the disease.  $R_0 > 1$  means that one infected person creates one or more secondary infections [4]. A similar indicator is the effective reproduction rate ( $R_t$ ), which is defined as the number of secondary infections caused by one infected person at a given point in time under certain measures, and one of the epidemiological indicators to assess whether an epidemic is currently expanding or converging [5].

$R_0$  is a product of the following three factors: i) the duration of infectiousness; ii) the probability of infection per contact (effective contact, which would cause infection) with one infected person and iii) the average number of contacts (effective contacts) per unit of time (rate) between a susceptible and infected person. The value of the third factor can vary from population to population [6]. Therefore, although the value of  $R_0$  is not virus-specific,  $R_0$ s of the same virus are not expected to differ significantly between populations where the average frequency of effective contacts does not differ significantly.

The  $R_0$  for Ebola virus disease, a Category I infectious disease, is estimated to be between 1.51 and 2.53 [7], and for smallpox between 3.5-6 [8] - By the way, the  $R_0$  for measles, which is known to be particularly highly contagious, is 12-18 [7]. The Infectious Agents Surveillance Report (IASR) of the National Institute of Infectious Diseases (NIID)

indicates an  $R_0$  of 1.7-1.9 for Severe Acute Respiratory Syndrome (SARS), a Category II infectious disease [4].

The  $R_0$  of COVID-19 virus is estimated to be 2.1-5.1 based on data from Hubei Province, China, in the early stages of the spread of the infection, but 2.1-3.2 based on analyses outside China [4]. Among the mutant viruses that have emerged since then, the  $R_0$  of the Omicron strain is estimated to be several times higher than at the beginning of the epidemic in 2020 [9].

In this Advisory Opinion, high-risk infections are defined as those that fulfil all three of the following conditions: (i) Human-to-human transmission by infected persons, including asymptomatic pathogen carriers (uninfected persons); (ii)  $R_0$  is 3 or larger; and (iii) the fatality rate must be at least 15%. For reference, we present the results of simple calculations below. If one infected person causes three new infections in two days, the number of patients is 243 ( $3^5$ ) in 10 days. Since high-risk infection defined in this document is assumed to have a fatality rate of 15% or higher, the death toll will be at least 36. Such an epidemic could lead to a collapse of healthcare in a short period of time, even if it occurs in a (relatively well-prepared) metropolitan area.

The definition of high-risk infections in this Advisory Opinion does not include routes and modes of human-to-human transmission. However, droplet and droplet nucleus transmission are likely to be the most common route of transmission for viral diseases that are highly contagious. This Advisory Opinion assumes that some infections can occur from non-human animals (hereafter simply referred to as 'animals') to humans. However, we consider only such infections that cause human-to-human transmission after animal-to-human transmission has occurred.

Some human-to-human infections, such as typhus rash, are arthropods-mediated (in this case, lice) --typhus rash is a rickettsial infection but is included in the discussion in this section--; and some are transmitted orally. It does not categorically exclude infections with such a mode of transmission as envisaged by this opinion. However, in a country like ours, with good sanitation and a high level of hygiene awareness among citizens, it seems unlikely that this mode of transmission would spread in such a short time. --Although, of course, this may not always remain the case in the future. Bites by mosquitoes and ticks can cause human infections, but it is considered unlikely or very unlikely that mosquitoes can transmit human-to-human infections. In addition, the following SCJ Recommendation noted that SFTS (Severe Fever with Thrombocytopenia Syndrome) and other tick-borne infectious diseases are becoming an important public health problem in Japan: the SCJ Recommendation entitled "Strengthening Education and Research in Sanitary Zoology Aimed at Reducing Damage Caused by Sanitary Pests" published in April 2019 by the Subcommittee on Applied Entomology of the Committee on Agricultural Sciences, the

Subcommittee on Veterinary Medicine of the Committee on Food Science, and the Subcommittee on Pathogens of the Committee on Basic Medical Sciences of the Science Council of Japan. In addition, in September 2019, SCJ issued 'Urgent Recommendations on Measures to Combat Tick-borne Infectious Diseases such as Japanese Erythrocytic Fever and SFTS' (Public Health Science Subcommittee of the Joint Committee on Basic Medical Sciences and the Committee on Health and Life Sciences, SCJ). It is hoped that these recommendations will be taken into consideration in the future regarding the control of arthropod-borne high-risk infections.

High-risk infections as defined above include known infections as well as emerging infections. Such an outbreak in a population without immunity to the pathogen in question would indisputably require immediate and stringent infection control measures. Based on this criterion, of the viral infections classified as Category I infections, the first one to be taken up as a high-risk infection in this opinion would be smallpox. As already mentioned,  $R_0$  is estimated to be 3.5-6 [8]. Fatalities can reach 20-50%. Several antiviral drugs are used for treatment, but evidence for their efficacy is still insufficient. If smallpox is endemic in humans, the possibility of bioterrorism must also be considered. In such cases, resistance to antiviral drugs may have been artificially introduced. Note that in May 1980, WHO declared that smallpox (smallpox) had been eradicated from the world. In response to this, the legal practice of vaccinations was abolished in Japan in 1980, and has remained so to the present day. No countries practices smallpox now that smallpox has been eradicated.

Viral infections other than smallpox can also cause human-to-human transmission, but the likelihood of transmission by droplets or droplet nuclei is considered low and the infectivity in such cases is unknown. Viral haemorrhagic fevers (e.g., Ebola virus disease), a Category I infectious disease, can be transmitted from mucous membranes and other parts of the body through contact (including ingestion of raw meat) with viruses contained in animal fluids (stool, urine, saliva, semen, etc.), tissue, animal carcasses and raw meat. It is usually considered unnecessary to cordon off an area if those in close contact are isolated and kept under surveillance [10]. However, it would be necessary to consider the case of a much higher infectivity.

Known infections that do not meet the criteria for high-risk infections as set out in this Advisory Opinion may also come to meet the definition of high-risk infections due to pathogen mutation, reduced immunity of the population or environmental changes. For example, when the fatality rate of COVID-19 infections increases, when the infectivity and fatality rate of SARS increases, or when the infectivity of Middle East Respiratory Syndrome (MERS) or Ebola virus disease increases. It is also worth remembering that in 2014, the largest Ebola virus disease outbreak to date occurred and there were fears of a



global epidemic, but we narrowly escaped the arrival of infected people in our country [2].

On Novel influenza, detailed investigations/considerations have already been made in the Ministry of Health, Labour and Welfare's 2009 Report of the General Council for Countermeasures against New Strains of Influenza (A/H1N1), published on 10 June 2010. The study was briefly presented in the Recommendation from this Subcommittee in 2020, which was on the creation of a permanent organisation for the prevention and control of infectious diseases. The  $R_0$  of a novel influenza that would produce a pandemic is estimated to be 2-3 [11]. Some of these may fall under the high-risk infections considered in this opinion.

## **2. Bacterial infection**

### **i) Plague**

Plague is the only bacterial infection classified as a Category I infection under the Infectious Diseases Control Law. This is due to infection with the plague bacillus (*Yersinia pestis*), which is transmitted mainly by arthropods (mainly fleas of the rat flea genus), with rodents as the carrier host. No domestic cases of plague have been reported since 1927 [12]. It can be divided into pneumonic/glandular/septic plague according to the route of infection and clinical presentation. In pneumonic plague, the patient is the source of infection and human-to-human droplet transmission occurs. The main route of transmission of glandular and septicemic plague is through the bite of fleas parasitising infected rodents and direct contact from infected animal pus, with low potential for human-to-human transmission. If appropriate antimicrobials are not used, the disease can progress to pneumonic plague, which can be fatal. The prognosis is good if effective antimicrobials (tetracyclines, aminoglycosides and quinolones) are administered within 8-24 hours of the onset of pneumonic plague, but the fatality rate is said to be 90-100% if appropriate antimicrobials are not used [12,13].

When plague bacteria are used in bioterrorism, they are likely to be artificially made drug resistant [12]. In such cases, antimicrobial treatment may not be effective.  $R_0$  reported to be close to 1, but 6.5-7.1 reported, inconclusive [14]. In the USA, five cases of infection from infected cats reported between 1977 and 1998 were thought to have been caused by droplet infection from cats that had developed pneumonic plague [15].

In conclusion, pneumonic plague can cause human-to-human transmission by droplet and droplet nuclei, and is highly fatal if not properly treated. However, if symptoms do not progress, the shedding of the organism from the lungs is not high, and the incubation period in the case of trans-respiratory infection is usually 2-3 days, so the risk of human-to-human transmission is low. Therefore, although it is unlikely for this disease to meet the definition of a high-risk infection, the possibility of a highly contagious and rapidly

spreading epidemic of this disease should be kept in mind.

## **ii) XDR tuberculosis**

Tuberculosis is a Category II infectious disease under the Infectious Disease Control Law. *Mycobacterium tuberculosis* that is resistant to at least both INH (Isoniazid) and RFP (Rifampicin), the primary antituberculosis drugs, is called multidrug-resistant tuberculosis (MDR-TB). In addition to multidrug resistance, those resistant to three or more of the six categories of secondary anti-tuberculosis drugs are called XDR Tuberculosis (Extensively Drug Resistant Tuberculosis). The six categories refer to aminoglycosides, polypeptides, fluoroquinolones, thioamides, cycloserine, and para-aminosalicylic acid. Its fatality rate is estimated to be over 20%, although it is unclear in some respects [16,17].

In 2021, the WHO definition of XDR TB was changed, and XDR TB is now defined as "Tuberculosis caused by *Mycobacterium tuberculosis* strains that meet the definition of MDR-TB and are resistant to fluoroquinolones and at least one Group A drug other than fluoroquinolones". Since Group A drugs are currently bedaquiline and linezolid as well as levofloxacin/moxifloxacin, which is a fluoroquinolone drug, XDR-TB is MDR/RR-TB resistant to bedaquiline or linezolid or both in addition to fluoroquinolones.

In the case of tuberculosis,  $R_0$  can range from less than 1 to more than 10. In XDR TB, if its fatality rate (rate of severe disease and incidence of serious sequelae) is assumed to be 15% or more, and the  $R_0$  is 3 or more, the disease must be treated as a high-risk infection.

Tuberculosis control measures have included detailed health checkups, vaccinations, an ordered admission system based on full public funding, outpatient treatment, and long-term treatment based on patient registration [18]. However, XDR TB requires even more stringent infection control measures.

## **II. Analysis of current situation and problems**

### **A. Identification of infected persons and prevention of epidemic spread**

#### **1. Border control measures**

High-risk infections as defined in this Advisory Opinion would typically be imported from abroad. If a high-risk infectious disease occurs in a country or region outside Japan, and it cannot be determined that there is no possibility of infected persons invading Japan, entry of infectants into the country cannot be prevented unless we prohibit entry from all regions, not just the countries and regions where the infection has occurred. However, it would be extremely difficult to prohibit the entry of Japanese nationals and foreigners residing in Japan from returning to Japan, as special circumstances, such as humanitarian reasons, must be taken into consideration. It is necessary to secure an appropriate facility in Japan, detain them there, observe their health conditions for a period of time as deemed necessary, and if necessary, transfer them to an appropriate medical facility for treatment. Restrictions on movement should be removed after confirming that they are not infected (in the case of infected persons, the restrictions should be removed after confirming that they have not shed any pathogens and are not at risk of secondary infection). These responses are similar to those for other infectious diseases, but more stringent measures are required for high-risk infections.

The Quarantine Act states that for quarantinable infectious diseases, the quarantine station chief may "isolate a patient with an infectious disease or have a quarantine officer isolate him or her" (Article 14, paragraph (1), item (i), Article 15) to the extent deemed reasonably necessary, and "detain a person who may have been infected with an infectious disease pathogen or have a quarantine officer detain him or her" (Article 14, paragraph (1), item (ii), Article 16) only when the pathogen is deemed likely to enter the country and seriously affect the lives and health of citizens.

When COVID-19 was first introduced to Japan, the infection was not regulated by the Quarantine Act, and the Government had no choice but to request cooperation from those who refused to be tested upon entry into Japan. The Government designated COVID-19 as an infectious disease under Article 2, item (iii) of the Quarantine Act through a Cabinet Order that came into effect on February 1, 2020, and additionally designated it as an infectious disease of Article 34, paragraph (1) of the Quarantine Act by another Cabinet Order issued on February 13, 2020, thus establishing a system that allows for temporary isolation and detention measures under the Quarantine Act for entrants with suspected COVID-19 infection. Subsequently, COVID-19, classified as a Category 2 equivalent designated infectious disease, was positioned as a quarantinable infectious disease under Article 2, item (ii) of the Quarantine Act in the revision of the Infectious Diseases Control Law promulgated on February 3, 2021. At the same time, "a person who possesses an

infectious disease-causing pathogens and is not showing symptoms of such infectious disease" (an asymptomatic pathogen carrier) is also considered a patient under Article 2-2, paragraph (3) of the Quarantine Act, which was revised at the same time, and the quarantine station chief can request "an infected patient or a person who may be infected by such infectious disease-causing pathogens" to stay home and report their health status and other necessary cooperation (Article 14, paragraph (1), item (iii), Article 16-2).

Article 36 of the Quarantine Act imposes penalties (up to six months in prison or a fine of up to 500,000 yen) for making false statements in questionnaires or declarations, or for "refusing, obstructing, or evading" a medical examination or inspection conducted by the quarantine station chief or quarantine officers. In addition, if a "person who may have been infected with an infectious-disease-causing pathogens" does not respond to a request to stay at home, etc., measures such as "detention" at a facility may be taken (Article 14, paragraph (1), item (ii)). In addition, "if a person is placed under isolation or suspension and escapes during the continuation of such a dealing" is subject to a criminal penalty of "imprisonment for not more than one year or a fine of not more than one million yen" (Article 35, item (ii)).

In the border control measures for COVID-19, there were persons who did not respond to health follow-up and whereabouts verification, persons who did not comply with requests for cooperation and engaged in unnecessary outings, and persons who refused to take immediate measures to enforce isolation and suspension to prevent infection [19]. Based on this, the revised Quarantine Act promulgated on December 9, 2022 requires persons at risk of infection to stay at home or cooperate in reporting, and allows "instructions" to stay if such persons do not comply with such cooperation without just cause (Article 16-3), and imposes imprisonment of up to 6 months or a fine of up to 500,000 yen (Article 36, item(viii)) if a person fails to report whether he/she is following the instructions or makes a false report.

With the revision of the Quarantine Act in 2022, "border control measures" have been greatly improved. As a result, those entering Japan who are judged to be "persons who may have been infected with infectious disease agents" under the Quarantine Act are subject to severe restrictions on their movements and human rights restrictions. For this reason, the period of restriction on the movement of those entering the country must be kept to the minimum necessary. On the other hand, under the current circumstances, it may not be possible to impose strong behavioral restrictions on people entering Japan even if such restrictions are necessary to slow down the introduction of high-risk infectious diseases originated overseas into Japan. The reason is that the target is limited to quarantinable infectious diseases designated in Article 2, items (i) and (ii) of the Quarantine Act (which are considered non-endemic in Japan). Note that the Act does not cover the

other infectious diseases (such as the aforementioned XDR tuberculosis) and unknown infectious diseases. Based on the International Health Regulations, a system is needed to promptly implement domestic responses (including revision of Quarantine Act ~~others~~) to infectious diseases which the WHO and other organizations have determined that they should be addressed internationally.

From the experience of the COVID-19 pandemic, infection prevention measures for immigration inspectors, quarantine officers, and those in charge of transporting have now been greatly improved. However, it is necessary to verify to what extent the current infection prevention measures, including equipment and personal protective equipment, are sufficient to deal with the infectious capacity of high-risk-infectious-diseases. In addition, in the event that an outbreak of a high-risk infectious disease actually occurs overseas, and preparations for invasion into the country become necessary, a system must be in place to deploy and make available the personal protective equipment necessary to protect against infection, as well as to allow passport control and quarantine measures to be carried out by holding prospective entrants in a negative pressure room. When facing a risk of an infected person entering our country, and having an effective vaccine because of the high-risk infectious disease in question being a known infection, it is necessary to examine to what extent the vaccination system for quarantine officers and those assisting them in their work can reduce the risk of infection and serious illness, assuming a higher infectivity and fatality rate.

## **2. Management of infected persons**

The first and most important measure to prevent the spread of infection is isolation and treatment of infected persons. Although Japan's infectious disease medical care system has improved in response to the COVID-19 epidemic, as pointed out in the 2020 Recommendation from this Subcommittee entitled "Establishment of a permanent organization for the prevention and control of infectious diseases," Japan has fewer infectious disease specialists than in other countries (1,770 certified infectious disease specialists by the Japan Infectious Disease Society as of June 2023). Consideration should be given to establishing a department of clinical infectious diseases at a university medical school in each of the blocks described in the Recommendation (e.g., Hokkaido, Tohoku, Kanto, Koshinetsu-Seizou, Tokyo, Tokai-Hokuriku, Kinki, Chugoku-Shikoku, Kyushu-Okinawa) to foster specialists in infectious diseases.

High-risk infections are more likely than other infections to cause severe illness in short period of time, so even those with mild illnesses need to be accommodated in a healthcare facility. Asymptomatic infected persons are placed under observation, if not admitted to a medical facility, and are asked to avoid social contact, such as restricting their outings, from

the perspective of preventing transmission to others. If the infected person has family members or other persons living with them, they should be placed in suitable accommodation.

The Infectious Diseases Control Law, the legal basis for isolation measures, is based on the basic principle that appropriate regulations should operate effectively while fully respecting the human rights of patients with infectious diseases and others. Regulatory measures shall be the minimum necessary to prevent outbreaks or the spread of infectious diseases. The basic approach was a non-coercive one, whereby patients and others were protected by providing good quality and appropriate medical care based on public funds at designated medical institutions for infectious diseases, thereby eliminating the possibility of transmission from infected persons to others (risk of other harm).

Until the Infectious Diseases Control Law was amended in 2021, the Law was prefaced with a 'recommendation' (a request for voluntary cooperation) to patients and others in the expectation of a voluntary response upon hospitalisation, and hospitalisation measures would be taken if the patient did not respond to 'persuasion' (Article 19). The system was originally designed to allow for immediate enforcement without resorting to penalties, but a 2021 amendment to the law imposed a fine of up to JPY 500,000 for failure to comply with hospitalisation measures or for fleeing from the hospital (Article 80). As a result, the character of the 'recommendations', which were based on respect for patient autonomy and mutual understanding and trust between patients and administrative bodies, had to be significantly altered, and it is pointed out that consistency with the principles of the Infectious Diseases Control Law remains a problem [20].

Even after the amendment to the law, if an infected person does not consent to isolation, he or she cannot be taken into custody. The inability to implement the necessary infection control measures as a statutory act has left it to the field.

In the 2021 amendment to the Infectious Diseases Control Law, placed was a provision (Article 80) for imposing a fine, which is a sanction for breach of duty. If, by such a placement, the legislators think that they themselves "made it clear that the recommendation in Article 19, paragraph (1) is an adverse legal disposition, i.e., imposition of an obligation to be hospitalised" [21], the Law should establish a provision for hospitalization orders and impose a duty directly, in order to ensure opportunities for prior procedures and litigation [22]. A 'duty imposition mechanism' is even more necessary in the case of high-risk infections where the degree of imminence of danger and time urgency is high. This is because situations may arise where there is no alternative but to take persons into custody who do not comply with the isolation measures.

In the event that preparations could not be made in advance, it is conceivable that the opinions of experts could be promptly heard in an emergency, and the area could be

sealed off based on the results; then afterwards, the legal validity of the decision could be debated in the Diet. However, even for infectious diseases that can be predicted in advance, such a response will make it difficult to achieve public consensus.

### **3. Prevention/reduction of contact with infected persons and management of contact persons**

Given the high infectiousness of high-risk infections, even contacts that would be relatively low risk of infection in the case of conventional infections are considered to be contacts at risk of infection, and contact persons may need to be subjected to strict behavioural restrictions. Specifically, it may be necessary to impose behavioural and work restrictions on contacts, such as refraining from leaving the house, which can effectively be regarded as isolation measures, and to take those who do not comply into custody.

When identifying infected persons, active epidemiological surveys play an important role. However, this may place an excessive burden on the operations of public health centres and other facilities. The support system for public health centre functions and health centre operations needs to be strengthened as stated in the 2020 Recommendation of this Subcommittee entitled “Establishment of a permanent organization aimed at preventing and controlling infectious diseases”. IHEAT, an organization led by the Ministry of Health, Labour and Welfare, should be utilized.

Under the Infectious Diseases Control Law, patients with infectious diseases and asymptomatic pathogen carriers are restricted from working if necessary (Article 18). Violations are punishable by a fine of up to 500,000 yen (Article 77, item (iv)). The first priority should be to create a social climate in which voluntary restrictions on behaviour can be obtained. Resorting to penalties should be carefully considered only if this is still ineffective. It is necessary to ensure that restrictions on employment do not result in economic hardship. In addition, the law needs to clearly state right redress procedures such as ex post facto appeals.

As the number of contacts (potentially infected contacts) by a single infected person with a high-risk infection will often reach triple digits in a short period of time, it is necessary to ensure that facilities are available to accommodate and 'isolate' a large number of people and monitor their progress. It is necessary to select a location that does not allow droplets or droplet nuclei of infected persons to leak into the facility surroundings and infect neighbors even if an infected person occurs from such a facility. Consideration should be given to how many infected people can be accommodated if existing buildings are rented or converted in such locations. Closed public schools in areas with low populations could be used to house them.

If the rented/converted building cannot be used for an extended period of time, there is a

need to construct facilities that can accommodate individuals for a long duration in a short period of time. It is necessary to develop technologies for constructing buildings that can be built and dismantled in a short period of time, and to establish a system for building accommodation facilities using these technologies. Such buildings can also be used in the event of other disasters that require the evacuation of residents.

#### **4. Prevention of infection during transfer and transport**

Legal arrangements for the transport of persons infected with high-risk infectious agents as defined in this Advisory Opinion are necessary. In the case of COVID-19, transfers for securing hospital beds were defined as transport, while transfers necessary for treatment were defined as 'transfers' as defined in the Infectious Diseases Control Law, the cost of which was borne by the public purse. For high-risk infections, similar measures should be taken to ensure that the public burden is borne by the public in order to be fully covered.

When cremating infected corpses (including non-human animals), transportation to a crematorium is also required. It is necessary to take appropriate measures in advance by referring to Guidelines for the Cremation of the Bodies of Patients who Died from Category 1 Infectious Diseases [23] and, the guidelines for treatment, transport, funerals, cremation, etc. of people who have died or are suspected of dying due to the new coronavirus infection [24].

The Infectious Diseases Control Law defines the transportation of infected persons from their homes, accommodation, clinics, hospitals, etc. to isolation facilities as the work of prefectures and other authorities, and the cost of transporting patients is covered by the cost of infectious disease prevention services. The transport of a patient already admitted to a medical institution to another medical institution is carried out under the management and responsibility of the medical institution and, unlike transfers stipulated in the Infectious Diseases Control Law, there is no public cost-sharing.

#### **5. Restrictions on human flow and logistics to prevent the spread of infection**

Restrictions on human flow and logistics are necessary in situations where the area of a high-risk infectious disease outbreak cannot be reliably identified--e.g., i) when a city-wide outbreak occurs; and ii) when an infected person uses mass transit connecting long distances--, or in situations where a number of secondary cases of infection have occurred.

Article 33 of the Infectious Diseases Control Law states that " If a prefectural governor deems it particularly necessary for the purpose of preventing the spread of a Category I Infectious Disease, and it is difficult to achieve the purpose by means of disinfection, the prefectural governor may restrict or block the traffic in places where patients with that Infectious Disease stay and other places contaminated or suspected to have been



contaminated with pathogens of that Infectious Disease, in accordance with the standards specified by Cabinet Order, for a specified period of not more than 72 hours. According to this law, it is possible to restrict or block traffic for up to 72 hours; however, it is not considered possible to apply this repeatedly on the basis of the Infectious Diseases Control Law alone and implement traffic restrictions or blockages for a substantially longer period of time.

The Governments need to discuss and consider legal and specific implementation issues regarding restrictions on people flow and logistics, such as traffic restrictions and blockages, in normal times, and take the necessary countermeasures. The patient and his or her cohabitants are transported to a medical facility or contact person's accommodation; and the residence is sealed and disinfected. It is unlikely that measures such as sealing off the area surrounding the patient's residence or sealing off an apartment block are necessary to prevent the spread of infection in order to prevent secondary infection originating from the patient in question. However, as mentioned at the beginning of this section, restrictions on human and logistical flows are necessary in situations where areas of high-risk infectious disease outbreaks cannot be reliably identified, or where a large number of secondary cases of infection have occurred.

Voluntary restraint of human flows and logistics requires information to be made publicly available. Article 44-2, paragraph (1) of the Infectious Diseases Control Law states that when the Minister of Health, Labour and Welfare recognizes the outbreak of a New Infectious Disease, the Minister must promptly publicize to that effect, disclose the area facing the outbreak to the public, and spread the information on the New Infectious Disease pursuant to the provisions of Article 16 paragraph (1). The Minister must sequentially publicize the measures to be implemented and the information necessary for the prevention of the outbreak or spread of the New Infectious Disease in newspapers, by broadcasting, via the Internet, or by any other appropriate means pursuant to the provisions of this Act (Article 44-2 paragraph (1)). Should be included in such information are means of examining the pathogen, pathological conditions, means of diagnosis and medical treatment, and means of infection prevention. However, it has also been pointed out that public information disclosure could lead to discriminatory attitudes [25,26]. Prejudice and discrimination not only cause irreparable divisive wounds in society but also negatively affect behavioural history-taking of infected people, preventing them from speaking the truth. and, in turn, leading to the spread of infection. It is necessary to increase the public's literacy of infectious diseases and ensure adequate risk communication about infectious diseases in normal times.

If there is an effective vaccine for a known infectious disease or for other reasons, vaccination should be provided to healthy residents in the area (healthy members of the

society) in which the epidemic is confirmed.

## **6. Preventing the spread of epidemics by blocking areas**

In situations where the spread of an infected area or group of high-risk infections cannot be determined, precautionary measures should be taken to prevent the spread of infection throughout the country by restricting human flows and logistics, just in case. A 'wall' needs to be installed to prevent the infection from spreading outwards, like a fire wall to slow/prevent the spread of fire in the event of a fire (dare I add, to prevent misunderstanding, that this 'wall' is not physical, but functional). However, if regional blocks are created at the municipal level to cut off people flow, it is likely that essential workers will not be available in those areas. Special emphasis needs to be placed on securing those working in urgent jobs in healthcare, nursing, police, and firefighting. Where there is an effective vaccine for a known infectious disease, for example, the right to vaccination and regular testing should be guaranteed to healthy essential workers.

Regional blocks should be established as large enough to allow for the flow of people required to sustain the minimum necessary social and economic activities. When establishing regional blocs smaller than prefectures, it is likely that supports such as the dispatch of personnel, including infectious disease specialists, from other regions, and the delivery of supplies and equipment necessary for infection prevention and treatment will be required, and a comprehensive support system should be considered at normal times. In metropolitan areas, there is likely to be a massive flow of people beyond the framework of the prefectures, and it may be necessary to create regional blocs to bring the prefectures together. The creation of such regional blocks (regional allocation) should be decided based on opinions from experts in infectious diseases, human flows, and logistics, etc. in normal times. Furthermore, in preparation for the situation where the regional blockade lasts for a long time, exceeding several weeks, it is necessary to consider issues, organize, and train during normal times. Furthermore, if the blockade continues for a long period of time, to be needed are flexible responses, including subdividing the blocks on the basis of infection situation, local functions, and response status.

Under the direction of the Government's command post organisation for infectious disease control, it is necessary to consider converting training ships and training ships of universities and high schools belonging to the regional block so that they can provide outpatient care, and dispatching medical and administrative staff, including medical and nursing students, from the universities to some of these ships to serve as disaster hospital ships to provide medical care to general patients.

Even excluding those with a gross tonnage of less than 100 tons, there are around 50 training and apprenticeship vessels in the country. When the response to high-risk

infectious diseases restricts the flow of people and logistics in the region, it is necessary to consider putting such 'hospital ships' in charge of the medical response to the consultation and treatment of patients with chronic and acute diseases that cannot (or cannot) be handled in the region during the period of the measures. If a 'hospital ship' can be secured, it can also be used to accommodate small numbers of contactees.

## **7. Legislation to restrict people flow and logistics between regions**

While some argue that restrictions on human flows and logistics that would amount to a blockade of an area cannot be justified under the current Constitution, some current individual laws, such as the Basic Law on Disaster Countermeasures, envisage large-scale restrictions on action in preparation for imminent danger. According to this, it is necessary to "carefully clear constitutional issues one by one, such as under what conditions a curfew is permissible, whether the ban should be imposed uniformly, and what the price of the ban should be"[27], in other words, the law needs to be developed.

On the premise of such legislation, the Government of Japan should make efforts to reach a public consensus through the following activities: (i) consolidating the opinions of infectious disease experts, regional public health and transport experts and others, and prepare a concrete proposal for regional blockade within the constraints of the Constitution based on the views of such expert groups; (ii) obtaining opinions from Public Health Centres and other public health frontlines to ensure effectiveness; (iii) presenting this as risk communication to the public and obtain their opinions; and (iv) making the necessary revisions. More people may be willing to tolerate a regional blockade if several infected people are in serious condition and the area where they appear is widespread, but it is too late to implement a regional blockade after such a situation has arisen. As mentioned above, if advance preparations could not be made, it is conceivable that the opinions of experts could be promptly heard in an emergency, the area could be sealed off based on the results, and the legal validity of the decision could be debated in the Diet after the fact. However, it will be difficult to achieve public consensus on such a response, even for infectious diseases that can be predicted in advance. When implementing restrictions on human flows and logistics, it is necessary to establish the respective functional roles and legislation at national level (including the Self-Defense Forces), prefectural level (including the police) and municipal level (including the fire brigade), as well as a mechanism for cooperation.

If strict measures to restrict people flow and logistics are actually implemented between the infection outbreak area and the surrounding areas, company managers and employees will have their private rights restricted, while the Government will be politically responsible for taking care of 'people's livelihoods and national economic stability'. The Governments

need to be prepared in normal times to be able to quickly build up human rights protection and livelihood support, including the provision of daily necessities, for all citizens in an emergency. It is also necessary to assess, after the fact, the direct human suffering and health effects of the presence or absence of such measures, compared with the indirect human suffering and health effects due to economic and other impacts.

Even if regional blockades are justified to defend society against high-risk infections, they must be combined with real-time monitoring of the infection situation and rapid withdrawal of restrictions when they are no longer needed [28]. Nevertheless, it cannot be ruled out that, after the measure is lifted, there may be acts of discrimination against residents of the infected outbreak area who were subject to the measure. It is necessary to prevent such human rights violations. Furthermore, as a post-process, in addition to the verification of the policy-making process and the way policies are implemented by the administrative bodies in charge, by a standing body for the prevention and control of infectious diseases, as recommended by the 2020 Recommendation of this Subcommittee entitled "On the establishment of a standing body for the prevention and control of infectious diseases", it is necessary to establish a mechanism in law to check whether there have been excessive restrictions on the rights and interests of citizens when implementing policies. In addition, it is necessary to check whether there have been excessive restrictions on the rights and interests of citizens in the implementation of policies by the Diet and the courts, and to legally establish a mechanism to provide relief to victims of discrimination and prejudice identified by the courts and human rights protection bodies.

## **8. Institutional issues related to facility use and health-related professions**

Under the current system of the Infectious Diseases Control Law, the Medical Care Act, the Quarantine Act, and other related laws, if the health department alone were to take measures against high-risk infectious diseases, there would be an absolute shortage of facilities to accommodate patients and close contacts, and a shortage of personnel to run these facilities. It is undeniable that the division of roles and coordination of the various laws were not always clear. In the COVID-19 pandemic, which began in 2020, countermeasures were confused since even trivial matters were regulated by issuing a huge number of administrative notices.

For example, vaccination under the Immunisation Act is regarded as "health promotion" through disease prevention, and administratively, the main duties include optimizing public expenditures, managing vaccination records, and providing relief for health damage. The current public immunisation program, which aimed at mass immunisation, had enormous difficulties in securing pre-screening doctors, vaccinators, etc [29]. Measures such as allowing dentists and others to perform vaccination duties have been taken. Further, the

way to carry out preliminary examinations in the program should also be considered as part of future infection control measures, with a view to expanding the scope of duties during normal times. As part of future infection control measures, it should be considered how to conduct preliminary examinations, with a possibility in mind to expand the program, during normal times.

The transfer of infected persons was originally considered the responsibility of Public Health Centres under the provisions of the Infectious Diseases Control Law. However, the COVID-19 pandemic did not ensure from the outset that sufficient vehicles were available to transport infected patients, and in reality, even before the number of infected patients had increased, fire department's ambulances were responsible for transporting the most seriously ill patients [30]. Based on these cases, it is clear that current laws and regulations and their operation do not always function well when it comes to high-risk infectious diseases.

## **9. Research System**

It was pointed out once again that virological research in Japan may have lagged behind that in Europe and the USA when it came to countermeasures against the COVID-19 pandemic. The Government should take the lead in establishing a funding system to support microbiological research in Japan as soon as possible in order to promptly deal with new pathogen infections that may occur in the future, and should also take the lead in training researchers. In addition, experiments dealing with genetically modified organisms that process viral nucleic acids outside the cell required the approval of the Minister of Education, Culture, Sports, Science and Technology (MEXT), but the treatment of such experiments needs to be re-examined. In the first place, what should be noted is the fact that SARS-CoV-2 was classified as Category 3 by the amendment of MEXT notification on 15 February 2021, and the examination process was subsequently speeded up. Meanwhile, as of November 30, 2022, the National Institute of Infectious Diseases required a BSL-3 laboratory for SARS-CoV-2 infection experiments. When COVID-19 was positioned as a designated infectious disease on March 26, 2020, this virus was classified as a VI-Class pathogen (the only legal regulation is compliance with standards). Some believe that this lack of legal control over the handling of pathogens was a barrier to the conduct of research. It is quite possible that unknown high-risk pathogens brought into our country from abroad could cause an epidemic in our country in the future. There is also a concern that the first epidemic takes place in our country. In such cases, it is the responsibility not only of our scientists but also of our nation to promptly obtain whole-genome information on the pathogen and to disseminate this information internationally. There are concerns that such responsibilities may not be able to be fulfilled

because it takes time to comply with the regulations of current system for handling pathogens. For example, although the classification of pathogens that are subject to regulation is stipulated by law, there is no legal regulation for the BSL classification that determines the level of handling of pathogens in laboratories. There are only pathogen safety management regulations created by the National Institute of Infectious Diseases. Furthermore, as pathogen classification and BSL classification do not necessarily match, it may take time to comply with current regulations. It is necessary to accurately identify the problems with the new pathogens mentioned above and to implement remedial measures quickly.

In addition, BSL-4 facilities are needed to train personnel with appropriate knowledge and experience in dealing with highly pathogenic micro-organisms and to carry out experiments. Currently, the Murayama Office of the National Institute of Infectious Diseases and at Nagasaki University have such facilities. The facility of the National Institute of Infectious Diseases has already been in operation since 2015 and played a central role in the administration of infectious diseases during the recent COVID-19 epidemic. Nagasaki University has formed a new research centre for infectious diseases in collaboration with nine leading Japanese universities in infectious diseases research, and established the BSL-4 facility. As the university has overseas education and research bases in Africa and Asia, and also collaborates with BSL-4 facilities overseas, it is expected to be useful for research on high-risk pathogens brought to Japan from overseas.

## **B. Establishment of communication systems including the information provision on patient isolation as well as movement restrictions for residents and others**

When isolating infected people or restricting their behaviours to prevent the spread of high-risk infections, people living must be accurately informed and their prompt cooperation must be obtained. This requires a system whereby people who do not understand Japanese, or who use written language or non-spoken language for communication can understand the need for these measures without ‘barriers’. In addition, unless information on the supply of daily necessities is communicated without omission or delay, the daily lives of those who are subject to behavioural restrictions, etc., will not be maintained. The unusual environment caused by an outbreak of infectious disease interferes with each individual's daily life activities. This brings about significant changes in each person, not only physically but also interpersonally and socially, and as a result, it has no small impact on many people mentally as well. Considerations in terms of communication are not only essential for information sharing to effectively implement constraints to prevent the spread of infection but it also plays an important role in maintaining the safe and healthy functioning of the society, the people, households, and communities that make up society,

and thus society as a whole, which they are trying to protect by preventing the spread of infection. To this end, the following measures are needed.

## **1. Mechanisms to efficiently to provide necessary information to all members of a society**

It is necessary to secure a means for the information to reach the recipient. Communication from the administrative side is mediated by language, but in Japan, both written and oral communications are primarily in Japanese. The number of foreign residents, which was 2.93 million at the end of 2019, has not decreased significantly to 2.76 million at the end of 2021, the year of the Corona disaster [31]. Not all of them can be expected to have access to multilingual translation software such as Google Translate and DeepL in PC or Google Lenses in smartphones, and it is necessary to develop a means of communicating required information to those with limited or no understanding of the Japanese language. Specific measures are described below.

### **a. Information provided in Japanese**

(1) Information in Japanese must always be transmitted orally and in writing. In addition, all transmissions must be accompanied by (text) data in a machine-translatable and read-out compatible form. This makes it easier for information to reach non-Japanese language speakers and the visually impaired.

(2) Information dissemination systems need to be developed specifically for expressions of urgency and immediacy. Machine translation is not effective in all languages and does not convey accurate information in the absence of context and shared background knowledge. This can be achieved by i) confirming that the translation system conducts translations by transformation (a mechanism in which the corresponding expressions are stocked in advance) and accumulates created translations, rather than generates translation automatically, ii) customising them as necessary, and iii) keeping them always accessible.

(3) (1) and (2) are supplemented by the use of 'easy Japanese' <sup>2</sup>.

### **b. Providing information to people with hearing impairment (required regardless of whether or not they have mastered written Japanese)**

(1) Deaf people do not perceive sound information (e.g., alarms and broadcasts). Isolation institutions and mobile locations need facilities in which audible warnings etc., are also

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<sup>2</sup> In August 2020, the Immigration Services Agency and the Agency for Cultural Affairs published the "Easy Japanese Guidelines for Residency Support" to promote the use of "Easy Japanese," and the recognition level of "Easy Japanese" was 29.6. has reached %

」 Agency for Cultural Affairs Japanese Language Division "Public opinion survey on Japanese language in 2019 [March 2020 survey]" [https://www.bunka.go.jp/tokei\\_hakusho\\_shuppan/tokeichosa/kokugo\\_yoronchosa/pdf/92882501\\_01.pdf](https://www.bunka.go.jp/tokei_hakusho_shuppan/tokeichosa/kokugo_yoronchosa/pdf/92882501_01.pdf)

issued visually for people with hearing impairments, by systems such as emergency alarm and telephone call linked to lights (flashes).

(2) For Japanese signers, Japanese is a second language, and the degree of acquisition varies, with some not being able to use it at all. In addition, even if a person is fluent in written Japanese, their comprehension may be hindered under stress or when they are unwell. It is not sufficient to support them only in "written summaries" or "written discussions" of oral statements. A system for transmitting (and receiving) information in Japanese Sign Language needs to be put in place. To this end, consideration should be given to responses including the following activities:

- i) The development of a translation system developed by NHK's Broadcasting Technology Research Institute for use in the event of a disaster
- ii) Network creation and simulation between sign-language interpreter dispatch desks in each prefecture, medical institutions, and government to ensure smooth collaboration in emergencies; and
- iii) Ensured accesses to the contact point by relay interpreters in cooperation with online relay interpreting services.

(3) Other so-called 'communication vulnerable groups' such as tactile speakers, older people affected by language use and people with physical or developmental disabilities need to be addressed so that they are not left behind. However, as the specific needs of persons with communication vulnerabilities and how to respond to them vary from case to case, it is necessary for local authorities to identify these needs and establish a system to facilitate the provision of information to medical institutions and others.

## **2. Mechanisms for access to and choice of necessary information on the part of members of society**

In disaster-stricken areas, it is essential to ensure access routes to information from the side of the members of society and to establish means for two-way communication. Being able to obtain the necessary information on their own and being given the right to make their own choices, even if they are limited, leads to reduced stress in unusual situations and, in turn, to active cooperation with the measures. It is therefore necessary to consider the relationship between the tools used for two-way interaction and language. Examples of specific measures of two-way interaction for this purpose include those as follows:

- a. A multi-mode (speech, sign language and tactile) window for accessing information needs to be set up.
- b. Inquiry response: Telephone lines and written documents alone will result in society members not being able to make the enquiry itself. A system is needed to set up a



reception desk for video enquiries, which can be linked to a local sign language interpreter.

c. In addition to the above, mechanisms to facilitate information sharing among society members are very effective not only in terms of information functionality, but also in reducing mental stress. For example, in the case of quarantine, online communication support systems should be established, both in terms of hardware and software. Another example is to arrange for 24-hour contact between quarantined persons and their family/carer, or to provide assistance for contact. This is particularly necessary to ensure that people who require special care in their daily lives, such as the elderly and those with developmental disabilities, can cooperate with infection control measures with peace of mind.

d. If it is necessary to move to a place or social environment that is different from everyday life, the communication method for each place/environment should be clearly indicated and the person and family members should be able to make a choice.

### **3. A mechanism to prevent some members of society from being disadvantaged because of differences in communication**

Consideration is needed not only to ensure that people are not only functionally left out of mechanisms described in the sections 1. and 2. simply because they use a different language or means of communication, but also to ensure that no one is (unconsciously) excluded from the people around or feels discriminated against because of the fact that they are 'different'. This is also, in turn, a condition for smooth acceptance of and cooperation with infection control measures in each community.

'Language discrimination in disasters'[32] needs to be examined from the following two perspectives: whether the discriminated party suffers a functional or substantive disadvantage, and whether they feel discriminated against even if they do not suffer a functional or substantive disadvantage. Functional and substantive disadvantageous discrimination can be addressed by government actively promoting the development of 1. and 2. Discrimination without functional or substantive disadvantage occurs mainly in interactions with contact staff and other members of society with whom they are not in daily contact. The response to this will involve society as a whole, and specific proposals need to be developed with the involvement of researchers specialising in this area.

Specific measures to eliminate language discrimination and to realise the principles of diversity and inclusion would include further promotion of Japanese language adjustments (easy Japanese) and the use of universal design (audio information, use of sign boards, pictograms, effective use of colours and numbers). In any case, a system for this purpose needs to be established, and it is necessary for each municipality to appoint a full-time staff member, such as a 'Japanese language coordinator for foreign residents' (provisional title).

The duties of this staff member include the following four points.

- a. Identification of all foreign residents: For foreign nationals who are registered as residents in the local government, information on their addresses, nationalities, mother tongues (and languages available as intermediary languages), family structures, school names and grades if there are school-going children/students, etc., should be centrally collected and maintained.
- b. Provision of information to foreign residents, using 'easy Japanese': Among the information disseminated by the local government, information important to foreign residents should be aggregated, translated into 'easy Japanese' and distributed individually by e-mail or other means.
- c. Building an information network for immediate response to emergencies: An information network using SNS, and other media should be established to provide highly urgent information during disasters and on infectious-disease countermeasures, etc in the native languages of foreign residents and in 'easy Japanese'.
- d. Establishment of a system for the delivery of Japanese language education: The establishment of operational cooperation and the deployment of necessary personnel should be provided to the Japanese language education projects at the relevant local authorities, businesses, and Japanese language classes.

The qualification requirements for these staff would include experiences in Japanese language teaching for a certain period of time, qualifications such as passing the Japanese Language Teaching Competency Test, and experiences in classroom management and coordination of local Japanese language education.

In addition to the above, in order to flexibly disseminate highly urgent information in multiple languages (including 'easy Japanese'), it is also necessary to secure the following two types of experts on the internet: 'experts in disaster and infectious diseases' who translate the relevant information into plain Japanese [33], which anyone can understand, and 'experts in each language' who quickly translate it into each language (including 'easy Japanese'), and establish a collaborative structure across prefectures and even countries as necessary.

Regarding COVID-19, there has been irresponsible information dissemination via SNS (such as rumors that vaccination is harmful). In some cases, this kind of information is more powerful than official information, and we believe that sufficient countermeasures must be taken by public institutions.

### III. Opinion

The Government shall stratify high-risk infectious diseases based on their characteristics (infectivity of infected persons including those who have not yet developed the disease, fatality rate, route of infection, length of incubation period, etc.), and shall establish a system to take measures (quarantine, isolation, home and facility observation, restriction of activities, employment, business, human flow and distribution, vaccination in case an effective vaccine is available, etc.) for each stratified group. At the same time, a monitoring system by the Diet and other organs regarding restrictions on private rights by the Government and a system that can take sufficient measures to stabilize people's lives and the national economy should be put in place.

#### **A. Viewpoints on identification of infected persons and prevention of secondary infections (border control measures, prevention of secondary infections, identification of endemic areas and groups, management of contacts, prevention of epidemic spread by blocking off areas) and on the legislative reform based on dialogue with the public.**

##### **1. Border control measures**

Border control measures have improved significantly with the revision of the Quarantine Act in 2022. However, there is a need for a mechanism to promptly designate infectious diseases caused by unknown pathogens or known infectious diseases that suddenly meet the definition of high-risk infectious diseases due to mutations in the pathogen, etc., as quarantinable infectious diseases. The Quarantine Act should provide a definition of high-risk infectious diseases and create a mechanism to automatically determine high-risk infectious diseases according to criteria such as their infectivity, fatality rate, route of transmission, length of incubation period, and infectivity of asymptomatic pathogen-infected persons, so that they can be added to the quarantine infectious diseases list.

With the amendment to the law, strict behavioral and movement restrictions will be imposed on those entering Japan who are deemed to be “persons who may have been infected with infectious disease pathogens” under the Quarantine Act, with the aim of preventing high-risk infectious diseases from entering the country. Therefore, the period of restriction on the actions and movements of such immigrants must be kept to the minimum necessary.

Isolation in hospitals and clinics in accordance with Article 15 of the Quarantine Act, and suspension in hotels and vessels in accordance with Article 16 of the Quarantine Act are carried out at the discretion and authority of the quarantine station chief. A system should

be established whereby information on infected cases identified in the quarantine station is immediately sent to the Government's 'command post' for infectious disease countermeasures, and the authority to take measures under the Quarantine Act should be transferred to that command post, so that the Government can take responsibility for securing medical facilities for high-risk infectious disease patients and infected persons and facilities for housing and monitoring their contacts. Furthermore, measures to prevent high-risk infections should be considered for immigration inspectors, quarantine officers and those responsible for the transport and transfer of incoming passengers.

## **2. Management of infected persons and contacts**

In the case of high-risk infectious diseases, it is necessary to specify rather straightforwardly in the Infectious Diseases Control Law that patients can be taken into custody and isolated for as long as medically necessary to protect them, to provide appropriate medical care and to control the spread of infectious diseases, so that the isolation of infected persons can be carried out as a statutory act, and for the Government to secure the necessary facilities for isolation and to provide them to local authorities.

In high-risk infections, infected persons can give rise to large numbers of secondary infections, which may require not only the isolation of infected persons but also strict behavioural restrictions on their contacts. Behavioural restrictions, such as refraining from leaving the house, which could effectively be described as isolation measures, may be imposed on contacts, and those who do not comply may be taken into custody.

For infectious diseases judged to be subject to measures such as isolation, work restrictions and behavioural restrictions, sufficient discussion should be held and public understanding sought in normal times so that a system can be established to define the subjects of the measures, their duration and content (content of work and behavioural restrictions) and to take adequate measures including livelihood support for those subject to the measures.

If the 'contact locations' span multiple prefectures, differences in administrative responses depending on the region may increase anxiety among residents, so the national government should take the lead in taking a unified response to initial measures against high-risk infectious diseases.

## **3. Prevention of infection during transfer and transport**

Legal arrangements should be put in place to transport persons infected with high-risk infectious agents as defined in this Advisory Opinion.

#### **4. Restrictions on human flow and logistics to prevent the spread of infection**

Prompt restrictions on human flow and logistics are necessary to prevent the spread of a high-risk infectious disease epidemic over a large area. The Government should consider how much time it can actually take to gather information, and then make decisions based on expert advice and take the necessary measures, for example by conducting an exercise in advance.

The publication of information is necessary for voluntary control of the flow of people and logistics in the region. The Government needs to discuss and consider legal issues and specific implementation issues regarding restrictions on people flow and logistics, such as traffic restrictions and blockages, and take the necessary measures in normal times. On the other hand, it has been pointed out that the publication of information on infection status and countermeasures may lead to a sense of discrimination. Prejudice and discrimination not only cause irreparable divisive wounds in society, but also negatively affect behavioural history-taking of infected people, shutting them out of the truth and, in turn, leading to the spread of infection. It is necessary to increase the public's infectious disease literacy and ensure, adequate risk communication about infectious diseases in normal times.

If there is an effective vaccine for a known infectious disease or for other reasons, vaccination should be offered to healthy residents in areas (healthy members of the society) in which an epidemic has been identified.

#### **5. Preventing the spread of epidemics by blocking areas**

In the situations in which regional and populational spread of high-risk infectious disease cannot be determined, it is necessary to establish regional blocks restricting the flow of people and logistics between them in order to prevent the spread of infection beyond them. Regional blocs should be large enough to ensure the flow of people to maintain the minimum necessary social and economic activities. The Government should decide on such regional blocks (regional allocations) in normal times, based on the opinions of experts in infectious diseases, human flows and logistics, and other experts. In addition, a system of wide-area administration through cooperation and coordination between municipalities in the block should be established at normal times, so that the necessary measures to prevent the spread of infectious diseases can be implemented promptly. Where such municipalities straddle several prefectures, the system should allow for coordination by the Government.

#### **6. Legislation to restrict people flow and logistics between regions**

If strict measures to restrict human flows and logistics are actually implemented between the areas with outbreak(s) and the surrounding areas, it is necessary to monitor the

infection situation in real time and promptly withdraw the restrictions when they are no longer necessary. Further, after the measures have been lifted, the policy-making process and the way policy is implemented by the responsible administrative body should be examined by the standing organisation aimed at the prevention and control of infectious diseases which was described in the 2020 Recommendation from this Subcommittee, entitled "On the establishment of a standing body for the prevention and control of infectious diseases". In addition, a mechanism should be legally established so that the Diet and the courts can check whether there were no excessive restrictions on the rights of citizens in the implementation of policies, and the courts and human rights protection bodies can provide relief to victims of discrimination and prejudice identified.

## **7. Legislation on facility use and health-related professions**

In order for appropriate responses against high-risk infectious diseases on the basis of experiences from the COVID-19 pandemic that began in 2020, the following points within the scope of hygiene regulations should be reviewed in detail from a crisis management perspective: i) the securing of accommodation and other facilities, and their operational methods, ii) the division of roles and handling of work scope among medical professionals engaged in infectious disease control the scope of work. Countermeasures against high-risk infectious diseases will fail if such burdens are placed solely on traditional public health centre operations, under the jurisdiction of the Infectious Disease Control Law.

## **8. Development of the research system**

If an unknown high-risk pathogen introduced into Japan from overseas causes a world-leading epidemic in Japan, it is the responsibility of our country to promptly obtain full genome information on the pathogen and to disseminate this information internationally. Japan should improve the current system accordingly to fulfil its assigned international responsibilities and to achieve world-leading results in this field in order to make its reputation as a state of science and technology a reality. We should also know that such efforts will contribute to our country's security in the world.

## **B. Viewpoints on the establishment of a communication system, including the of information provision on patient isolation and restrictions on the movement of residents and others.**

When isolating infected people or restricting their behavior to prevent the spread of high-risk infections, there needs to be a system for people who do not speak Japanese or use characters or a non-verbal language for communication so that they understand the need for these measures without 'barriers'. In addition, unless information on the supply of

daily necessities is communicated without omission or delay, the daily lives of those who are subject to behavioural restrictions, etc., will not be maintained. The unusual environment of an outbreak of infectious disease interferes with each individual's daily life and activities. Communication considerations are not only essential for information sharing to effectively implement constraints to prevent the spread of infection. It also plays an important role in maintaining the safe and healthy functioning of each of the people, households and communities that make up society, and thus society as a whole. In order to establish a communication system, it is necessary to have (i) 'a mechanism for providing necessary information efficiently and to all members of society'; (ii) 'a mechanism for accessing and selecting necessary information on the part of members of society'; and (iii) 'a mechanism to prevent some members of society from being disadvantaged due to differences in communication'.

## References

- [1] Benedictow OJ. The Complete History of the Black Death, Boydell & Brewer, 2021.
- [2] 国立感染症研究所 「エボラ出血熱とは」 (2019 年 3 月 27 日改訂)  
<https://www.niid.go.jp/niid/ja/diseases/a/vhf/ebola.html> (最終閲覧 2023 年 9 月 19 日)
- [3] 一般社団法人日本感染症学会の感染症クイック・リファレンス「ウイルス性出血熱」  
(2019 年 7 月 23 日最終更新)  
<https://www.kansensho.or.jp/ref/d05.html> (最終閲覧 2023 年 9 月 19 日)
- [4] 病原微生物検出情報 新型コロナウイルス感染症の感染性 IASR 2021;42:30-32.
- [5] 病原微生物検出情報 COVID-19 感染報告者数に基づく簡易実効再生産数推定方法 IASR 2021;42:128-129.
- [6] Harvard Global Health Institute. Understanding Predictions: What is R-Naught? February 7, 2020.
- [7] Eisenberg J, R0: How Scientists Quantify the Intensity of an Outbreak Like Coronavirus and Its Pandemic Potential. February 12, 2020.  
<https://sph.umich.edu/pursuit/2020posts/how-scientists-quantify-outbreaks.html> (最終閲覧 2023 年 9 月 19 日)
- [8] Gani R, Leach S. Transmission potential of smallpox in contemporary populations. Nature 2001;414(6865):748-51.
- [9] Sheikhi F, Yousefian N, Tehranipoor P, Kowsari Z. Estimation of the basic reproduction number of Alpha and Delta variants of COVID-19 pandemic in Iran. PLOS ONE, 2022;17(5)
- [10] 厚生労働省健康局結核感染症課 「一類感染症の行政対応の手引き (案)」 (平成 31 年 X 月)  
<https://www.mhlw.go.jp/content/10906000/000485755.pdf> (最終閲覧 2023 年 9 月 19 日)
- [11] 厚生労働省 「新型インフルエンザに関する基礎的データ」 (2009 年 8 月)  
<https://www.mhlw.go.jp/kinkyu/kenkou/influenza/dl/infu090828-01.pdf> (最終閲覧 2023 年 9 月 19 日)
- [12] 国立感染症研究所「ペストとは」 (2019 年 12 月 27 日改訂)  
<https://www.niid.go.jp/niid/ja/kansennohanashi/514-plague.html> (最終閲覧 2023 年 9 月 19 日)
- [13] 一般社団法人日本感染症学会 「肺ペスト」 (2019 年 7 月 23 日最終更新)  
<https://www.kansensho.or.jp/ref/d53.html> (最終閲覧 2023 年 9 月 19 日)
- [14] Evans C. Pneumonic Plague: Incidence, Transmissibility and Future Risks. Hygiene, 2022;2(1):14-27.
- [15] Gage KL, Dennis DT, Orloski KA, Ettestad P, Brown TL, Reynolds PJ, Pape WJ, Fritz CL, Carter LG, Stein JD. Cases of Cat-Associated Human Plague in the Western US,



1977–1998. Clin Infect Dis, 2000;30:893-900.

[16] Jacobson KR, Tierney DB, Jeon CY, Mitnick CD, Murray MB. Treatment Outcomes among Patients with Extensively Drug-Resistant Tuberculosis: Systematic Review and Meta-Analysis. Clin Infect Dis. 2010;51(1):6–14.

[17] Frank M, Adamashvili N, Lomtadze N, Kokhleidze E, Avaliani, Kempker RR, Blumberg HM. Long-term Follow-up Reveals High Posttreatment Mortality Rate Among Patients With Extensively Drug-Resistant Tuberculosis in the Country of Georgia. Open Forum Infect Dis, 2019;6(4): ofz152.

[18] 病原微生物検出情報 「結核の法的取扱いの変遷（結核予防法，感染症法）」 IASR 2017;38:233-234.

[19] 新型コロナウイルス感染症対応に関する有識者会議 「新型コロナウイルス感染症へのこれまでの取組を踏まえた次の感染症危機に向けた中長期的な課題について」（2022年6月15日）18頁

[https://www.cas.go.jp/jp/seisaku/coronavirus\\_yushiki/pdf/corona\\_kadai.pdf](https://www.cas.go.jp/jp/seisaku/coronavirus_yushiki/pdf/corona_kadai.pdf) （最終閲覧 2023年9月19日）

[20] 磯部哲「新型コロナウイルス感染症対策と法—医事行政法の観点から」学術の動向（2022年3月）36頁

[21] 原田大樹「コロナ・人権・民主主義」（2021年3月29日）

<https://www.web-nippyo.jp/22759/>（最終閲覧 2023年9月19日）

[22] 須藤陽子「再考 行政法における強制措置に関する理論的基礎（二・完）」立命館法学 2021年2号（396号）603 - 604 頁

[23] 厚生労働省健康局結核感染症課、生活衛生課「一類感染症により死亡した患者の御遺体の火葬の実施に関するガイドライン」（平成27年（2015年）9月24日通知）

<https://www.mhlw.go.jp/file/06-Seisakujouhou-11130500-Shokuhinanzenu/0000130189.pdf>（最終閲覧 2023年9月19日）

[24] 厚生労働省、経済産業省「新型コロナウイルス感染症により亡くなられた方及びその疑いがある方の処置、搬送、葬儀、火葬等に関するガイドライン」第2版（令和5年（2023年）1月6日）

<https://www.mhlw.go.jp/content/000653472.pdf>（最終閲覧 2023年9月19日）

[25] 新型インフルエンザ等対策有識者会議新型コロナウイルス感染症対策分科会—偏見・差別とプライバシーに関するワーキンググループ「これまでの議論のとりまとめ」（令和2年（2020年）11月）

[https://www.cas.go.jp/jp/seisaku/ful/henkensabetsu\\_houkokusyo.pdf](https://www.cas.go.jp/jp/seisaku/ful/henkensabetsu_houkokusyo.pdf)（最終閲覧 2023年9月19日）

[26] 金井利之『コロナ対策禍の国と自治体—災害行政の迷走と閉塞』「第3章 コロナ対策の閉塞」「5 公表と差別閉塞」258-299頁（筑摩書房、2021年）

- [27] 江藤祥平「匿名の権力：感染症と憲法」法律時報 2020 年 92 巻 9 号 73 頁
- [28] 穴戸常寿「新型コロナウイルス感染症と立憲主義」法律時報 2021 年 93 巻 3 号 82-83 頁
- [29] 新型コロナウイルス感染症のワクチン接種を推進するための各医療関係職種の専門性を踏まえた対応の在り方等に関する検討会「新型コロナワクチン接種に係る人材確保の現状について」（令和 3 年（2021 年）6 月 4 日）  
<https://www.mhlw.go.jp/content/10802000/000788078.pdf>（最終閲覧 2023 年 9 月 19 日）
- [30] 総務省消防庁「各消防本部からの救急搬送困難事案に係る状況調査（抽出）の結果」（令和 5 年（2023 年）9 月 12 日）  
[https://www.fdma.go.jp/disaster/coronavirus/items/coronavirus\\_kekka.pdf](https://www.fdma.go.jp/disaster/coronavirus/items/coronavirus_kekka.pdf)（最終閲覧 2023 年 9 月 19 日）
- [31] 出入国在留管理庁「在留外国人統計（旧登録外国人統計）統計表」2022 年 12 月  
[https://www.moj.go.jp/isa/policies/statistics/toukei\\_ichiran\\_touroku.html](https://www.moj.go.jp/isa/policies/statistics/toukei_ichiran_touroku.html)（最終閲覧 2023 年 9 月 19 日）
- [32] Uekusa S. Disaster linguicism: Linguistic minorities in disasters. *Language in Society*, 2019;48:353-375.
- [33] 庵功雄（編著）「日本人の日本語」を考えるープレイン・ランゲージをめぐって(2022)