Rapid infectious disease response is needed: Challenges seen from the frontlines of politics

Various challenges such as political leadership, preparation of medical systems, the relationship between the central and local governments, and the requirements of an emergency law on infectious diseases have become apparent as we respond to the unprecedented infectious disease (COVID-19). An expert on global health administration lays out a comprehensive set of issues for the current and future public health emergencies.

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At the time of writing this article, the world was facing the biggest global-health crisis of the twenty-first century due to COVID-19.

From the end of 2019 and into 2020, COVID-19 had spread not just within China from Wuhan City in Hubei Province, but also to Japan and the rest of the world, owing to the fact that its initial spread coincided with the Chinese New Year holiday. As Chairperson of the Special Committee on Global Health Strategy of the Liberal Democratic Party of Japan, I have previously responded to the Ebola hemorrhagic fever and other infectious diseases as a response party in the Liberal Democratic Party of Japan (LDP). The Special Committee convened on January 26 and had its first debate on COVID-19 measures, after which the LDP headquarters was established to facilitate a more comprehensive debate throughout the LDP. At present, I am an advisor to the Headquarters for Novel Coronavirus and Related Pneumonia, a newly established committee within the LDP as part of the COVID-19 response. In parallel with this, the Novel Coronavirus Response Headquarters (government headquarters) was established in the Cabinet after a Cabinet decision on January 30.

Health crises due to the international spread of infectious diseases are not limited to COVID-19, but are on the rise due to the movement of people, climate change, and continual contact between wild animals and people. Since the start of this century, they have been occurring once every two to three years on average.

For example, we had the severe acute respiratory syndrome (SARS) that spread across

the northern hemisphere from Guangdong Province in southern China in 2002, influenza A virus subtype H5N1 in 2009, Middle East respiratory syndrome (MERS) since 2012, Ebola hemorrhagic fever that started in West Africa around 2014 and is still ongoing with an outbreak in the Democratic Republic of the Congo, and Zika fever that was widespread in South America in 2015–2016. We cannot deny the possibility of similar infectious diseases appearing with the same frequency in the future and if we fail in our response, it will not only take human lives but will cause great damage to all of society and the economy as well as bring chaos to the international community. Moreover, it is not easy to defend against the spread of an infectious disease once it has started, which is why it was predicted from the beginning that measures against COVID-19 would be difficult especially because it was found that it could spread through subclinical infections where carriers do not show any symptoms.

COVID-19 was designated as an "infectious disease" under the Infectious Diseases Act and a "quarantine infectious disease" under the Quarantine Act in late January 2020. This was followed by the implementation of several national measures, including the hospitalization measures for patients, the provision of publicly funded suitable healthcare, the mapping of patients by rapid reporting from doctors, and active epidemiological investigation (contact tracing) when patients were discovered. As infectious diseases have been spreading in Japan over time, measures under the Infectious Diseases Act have become the basis for the country's basic response. Subsequently, the Act on Special Measures for Pandemic Influenza and New Infectious Diseases Preparedness and Response (Special Measures Act) was revised in mid-March by adding COVID-19 and giving the government more powerful tools when declaring a state of emergency. Like the American Public Health Service Act, the revised Special Measures Act allows the government to decide on general policy guidelines, after which each prefectural governor plays a central role in executing them.

During the first wave, which originated from the spread of the Wuhan virus strain, measures that focused on severing connections between clusters with confirmed infections were successful and the spread was contained to a considerable degree. However, since mid-March, infection pathways as well as the unknown number of infected persons have increased, along with a shift to a European virus strain that has started the spread of the second wave of infections. Moreover, the effective reproduction number of this infectious spread, which represents the average number of secondary infections from one infected person, was 1.0 or less until March 15, but then rose to 1.7 in late March. This led to a heightened risk of a sudden "overshoot" in patient numbers, especially in urban areas. On April 7, the revised Special Measures Act under the "Declaration of a State of Emergency" was proclaimed in the seven prefectures of Tokyo, Saitama, Chiba, Kanagawa, Osaka, Hyogo and Fukuoka, after which it was made nationwide on April 16.

The Declaration strengthened the powers of the central government and the prefectures, but individua and democratic rights are not so restricted like China, Europe and North America, the state's coercive power is clearly limited, and while some private rights are restricted, the coercive power does not come with any penal regulations but respects autonomy. This implementation of autonomy-based policies fortunately suppressed the infectious spread to a considerable degree from the start of the second wave in late March to one month later, thus avoiding a peak in late April.

This COVID-19 pathogen damages the tissues and organs of the human body in various ways and much is unknown about how much immunity the antibodies provide. Furthermore, unlike influenza, we do not know if it is seasonal so it is extremely likely that it will return in the fall. As such, we cannot afford the placidity of reviewing all aspects of the pathogen after things have calmed down but rather, we need to discuss the creation of a preparation system for emergencies in ordinary times. Thus, as we have crossed the peak for the time being, I suggest we examine the emergency response experienced by Japan so far and ask ourselves what kind of emergency system we should prepare for the next pandemic during normal times.

(1) The "Control-Tower" Function of the Cabinet Secretariat

In normal times, the Office for Pandemic Influenza and New Infectious Diseases Preparedness and Response is established under the Assistant Chief Cabinet Secretary (in charge of domestic affairs). Moreover, for the initial response to infectious diseases and other emergencies, the Councillors for Assistant Chief Cabinet Secretary is usually established under the Deputy Chief Cabinet Secretary for Crisis Management and the Chief Cabinet Secretary (in charge of national security and crisis management). Initially, the response to COVID-19 consisted of a group of about twenty people in the Office for Pandemic Influenza and New Infectious Diseases Preparedness and Response under the Assistant Chief Cabinet Secretary (in charge of domestic affairs) and the Councillors for Assistant Chief Cabinet Secretary under the Deputy Chief Cabinet Secretary For Crisis Management as well as the Ministry of Health, Labour and Welfare (MHLW). However, as COVID-19 spread, there was a perceived need to further strengthen the Cabinet Secretariat based on the revised Special Measures Act, after which the Office for Novel Coronavirus Disease Control, consisting of about sixty-five people, was established under a vice-minister-grade office head. At this office, the General Affairs, Steering, Diet, and Survey and PR Sections are responsible for liaising and coordinating with other ministries, agencies, and local governments, while handling notifications relevant to the revised Special Measures Act, and administrating the Advisory Committee on the Basic Action Policy and the Novel Coronavirus Expert Meeting in accordance with the revised Special Measures Act.

Amid the spread of COVID-19 and with the initial response that was primarily public health-related, Health Minister Kato Katsunobu took charge. However, it soon became

necessary for comprehensive coordination not only across the health sector, but also in the economic field. With this on March 6, Prime Minister Abe Shinzo instructed, "In order to minimize the impact of the COVID-19 infectious disease on citizens' lives and the economy, (we must) work together with the relevant ministers as a united government to strongly advance initiatives, including the submission of necessary bills to the Diet for swift adoption," and appointed Economic Revitalization Minister, Nishimura Yasutoshi, to take charge of the necessary measures in dealing with the novel coronavirus. As a result, the Office for Pandemic Influenza and New Infectious Diseases Preparedness and Response became directly connected to the minister in charge and the chain of command was strengthened.

This is the first infectious-disease emergency we have experienced and it also became necessary for the "control-tower" function of the Cabinet Secretariat to constantly respond in a flexible and swift manner, as the infectious disease's impact on society and the economy became more serious. In regard to the control-tower function, there was a perceived need to ensure transparency and implement swift decision-making from a risk-communication perspective as well as to reexamine the rules for decision-making and the questions of how to effectively utilize the steadily growing number of relevant organizations and experts, in the event of an infectious-disease emergency.

(2) Creating Functions for Clinical and Pathological Analysis, Testing, Epidemiological Surveys, and International Cooperation

In case of a zoonotic infectious disease that mutates into a pathogen that can be transmitted between humans, there is a need for the capacity to isolate the pathogen from samples and conduct pathological analysis for the sake of quickly understanding the actual conditions. It is also important to analyze the effects of the pathogen on bodily functions. At present, the National Institute of Infectious Diseases (NIID) is responsible for pathological analysis.

Next, if it is an unprecedented infectious disease, there is a need for testing. In this case, there is a need to identify the locations of infected persons through PCR testing, and what is important for this is the establishment of a testing organization that has the required human resources, equipment, and powers. In order to test effectively, there is a need for a tracing survey to clearly identify the infection pathways of those testing positive and initiatives based on epidemiological expertise.

On a global level, the French Institut Pasteur, the German Robert Koch-Institut, and other organizations have similar functions in their responses. Functions for international cooperation are vital to deal with infectious diseases that have no national boundaries.

In Japan at present, looking from a public-health perspective, the NIID, regional health research institutes, and public health centers of prefectures and ordinance-designated cities are the ones currently handling classified infectious diseases, including emerging infectious diseases, according to the Infectious Diseases Act. However, in the case of infectious

diseases like COVID-19 for which there are no specific medicines or vaccines, are surrounded by much uncertainty, and that are highly infectious, an expansive spread in Japan and abroad clearly cannot be handled properly within existing frameworks. There is a widespread understanding that we need to design institutions that can provide public-health approaches, local healthcare coordination, and centralized information management.

It has also become evident that there is a need for clinical functions for housing and treating patients when advancing research and development as needed while possessing the abovementioned functions for pathological analysis, testing system, and international cooperation.

(3) Securing Dedicated Hospitals and the Required Sickbeds for Emergency Infectious Diseases

In mid-April, the foremost concern was that healthcare would collapse when the number of infected patients reached its peak. Yet in reality, we must also be able to maintain the healthcare services provided by hospitals and clinics under the existing local healthcare system in case of an infectious-disease emergency.

To do so, it is important in ordinary times to designate hospitals dedicated to infectious diseases that can actively take in infected patients in the case of an emergency. For example, we may expect some public hospitals to provide a large number of sickbeds for infectious diseases.

Moreover, if the hospital sickbeds dedicated to infectious diseases are not sufficient, other medical institutions will also have to prepare to provide such beds. For COVID-19, there are a large number of asymptomatic carriers and patients with light symptoms, so coronavirus patients risk infecting family members, which is why measures were put in place to allow health monitoring in public facilities, hotels and so forth. However, by providing the two options of treatment at accommodation and treatment at home, a vast majority chose to be treated at home. In the future, legal reform will likely be needed so that treatment at accommodation will enable compulsory admission similar to hospitals.

(4) Clarifying the Division of Roles between State and Regional Governments

The government headquarters issued “Basic Policies for Novel Coronavirus Disease Control” on February 25, but it was the prefectural governors who were largely tasked with the implementation. Yet it was not necessarily clear what roles the state should play and what roles the regions should play. Likewise, it became clear that the public health centers supporting the testing on the frontline were part of two systems, one under the prefectural governors and one under the mayors of ordinance-designated cities. The state and prefectural governors need to clarify the division of roles in case of emergency in order to establish an information system that can be centrally managed as well as become better at working together effectively.

(5) Legislation for Infectious Disease Emergencies

Policies for the current infectious-disease emergency are proposed and implemented with reference to the Infectious Diseases Act and the revised Special Measures Act. The Japanese legislation for infectious-disease emergencies simply restricts some private rights without any penal regulations and relies on individuals' self-restraint when requested, but it has been successful to a certain extent. Nonetheless, we need to debate further how much authority the state ought to be given when it comes to limiting individual freedoms and private rights.

Meanwhile, issues pertaining to individual freedoms and privacy also come into play when conducting epidemiological tracing surveys of infected persons as regional health research institutes lack the authority to conduct on-site inspections and always need the presence of staff from public health centers. In the future, regional health research institutes that conduct epidemiological surveys during an emergency should be given the same legal powers as public health centers.

(6) Creating a Healthcare Information System on an Individual Basis

At present, we have a debate about factors like the number of tests, accurate positive rate, and effective reproduction number, but in order to get accurate testing numbers, it is important that information from public health centers, hospitals, and clinics is managed centrally. Since patient data is not managed centrally on an electronic platform, we see serious obstacles stemming from ineffective operations such as information conveyed by fax and being reentered at the public health centers. There are also many issues to do with master data relating to information about disease names, medicine names, medical payment codes, healthcare institutions, and so forth. The plan is for the state to create a system for centralized information management, but some challenges remain such as how they will work together with the Tokyo Metropolitan Government and others that are developing their own systems. Moreover, there are also plans in the near future for the launch of notification functions about contact with positive patients through smartphones and other devices, which are currently in place in other countries too. It is important that it does not unjustly violate individual freedoms and privacy as well as ensure that it is coordinated with the testing system.

Above, I have named some challenges that I have noticed based on our experience of an infectious-disease emergency in the past few months, but there are many others and the question of how to prepare an emergency system for Japan in ordinary times is an extremely difficult task. Not only does it encompass a broad range of fields, but it also touches on how we envision individual freedoms and democracy in Japan in the twenty-first century. At the same time, the challenges of infectious-disease emergencies also include areas where Japan has fallen behind due to the profound changes the world has undergone in the last twenty

years. As such, I hope that resolving these challenges can be an opportunity for Japan to soar once more by incorporating a long-term perspective that looks to the future while maintaining an underlying tone of individual freedoms and democracy.

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