

Expert Meeting on Novel Coronavirus Disease Control

Analysis of the Response to the Novel Coronavirus Disease (COVID-19) and Recommendations (May 29, 2020)

1. Introduction

- On April 7 of this year, a state of emergency was declared for seven prefectures in Japan because a surge in novel coronavirus infections was observed and the medical service system was becoming strained.
- On April 16, the declaration was expanded to include all of Japan's prefectures as areas where emergency measures should be taken.
- Thereafter, the number of new infections showed a steady downward trend as a result of a reduction in the amount of contact among people based on the request to stay home, among other measures. The following conditions were stipulated for lifting the state of emergency.
 - (i) The infection situation; whether or not the number of newly reported cases was at a level where counter-cluster measures could be taken sufficiently;
 - (ii) Whether or not a health system to deliver necessary medical care had been established; and
 - (iii) Whether or not a system had been set up to detect early trends in infection spread and to respond immediately.Upon meeting these conditions, the state of emergency was lifted in 39 prefectures on May 14; in Kyoto, Osaka, and Hyogo on the 21st; and the remaining five prefectures of Hokkaido, Chiba, Saitama, Tokyo, and Kanagawa on the 25th.
- Because this infectious disease is expected to "spread again" (have a "next wave"), long-term measures are required.
- The "next wave" must be minimized and delayed as much as possible through the cooperation of individual residents in modifying their behaviors through the thorough implementation of the "new lifestyle,"¹ as well as through requests to refrain from using facilities and holding events.
- Now, while the infection situation is relatively under control, is the time to strengthen the surveillance system and the test system, to establish counter-cluster measures and the medical service system, and to develop treatment methods and medications, etc.

¹ https://www.mhlw.go.jp/stf/seisakunitsuite/bunya/0000121431_newlifestyle.html

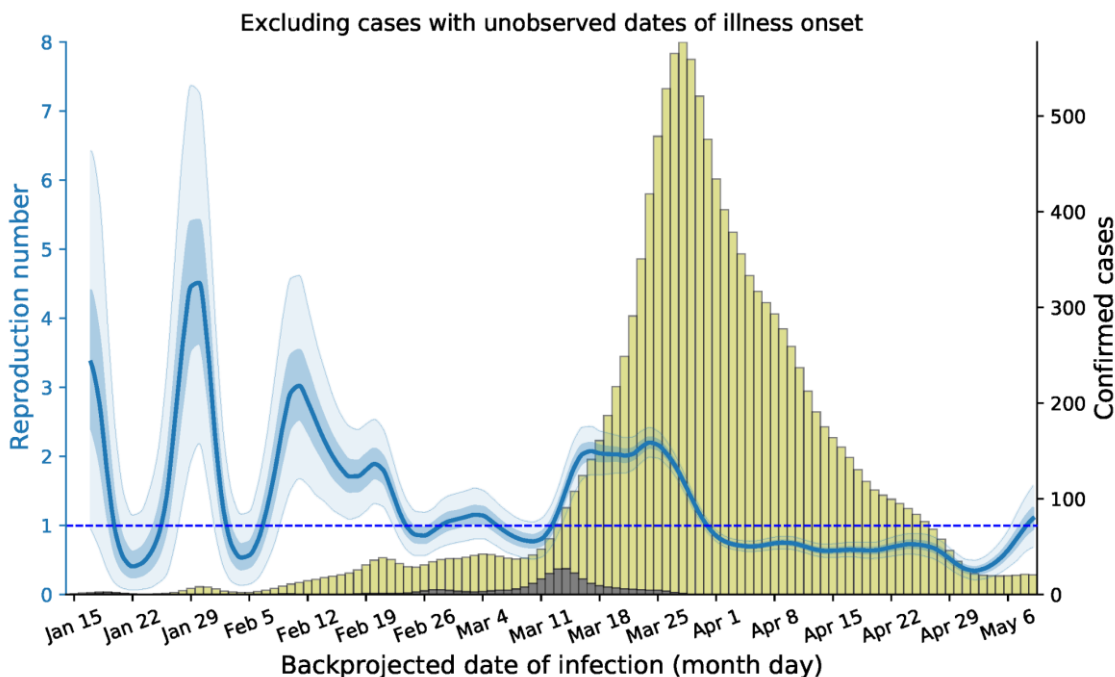
2. Evaluation of the infection situation, etc.

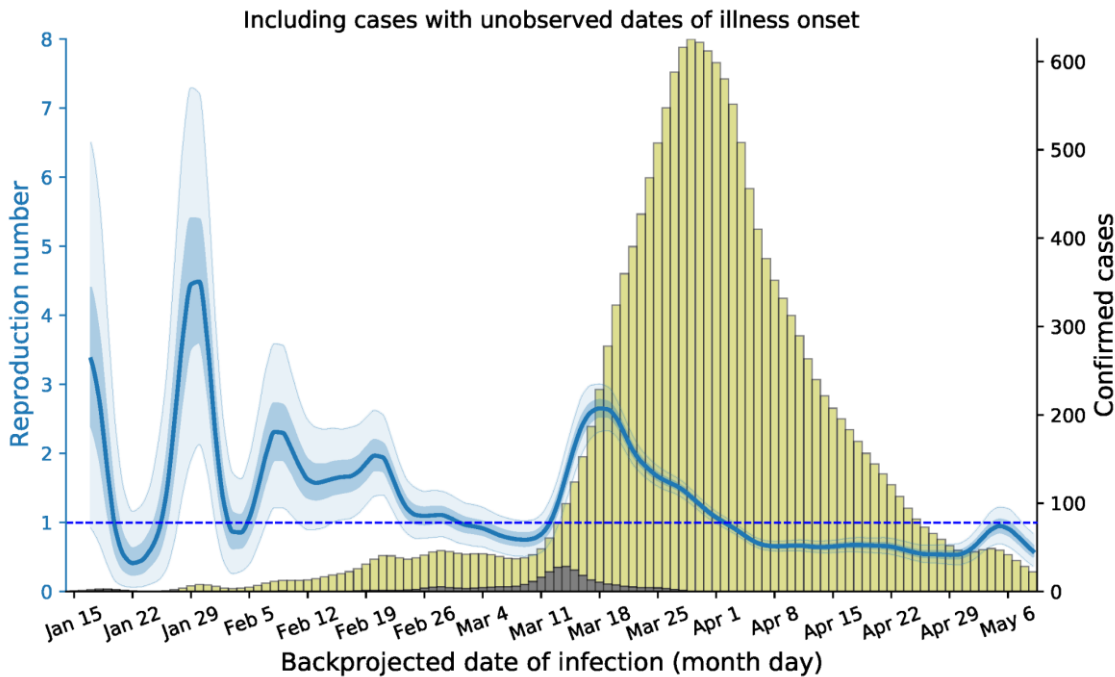
(1) Infection situation (epidemiological situation)

(i) Situation in the prefectures

- The number of new infections in the most recent week (May 21 to 27) was 228, a decrease to about 1/17 (6%) of the figure for six weeks ago (April 9 to 15), when the number peaked at 3,882.
- No new infections were confirmed in the most recent week in 28 prefectures; of these 28, 24 prefectures have confirmed no new infections for at least the previous two weeks.
- The most recent nationwide effective reproduction number was 1.4 nationwide and 1.6 for Tokyo. However, as the actual number of infected persons is decreasing, the effective reproduction number can fluctuate greatly, so careful, continuous monitoring is necessary.

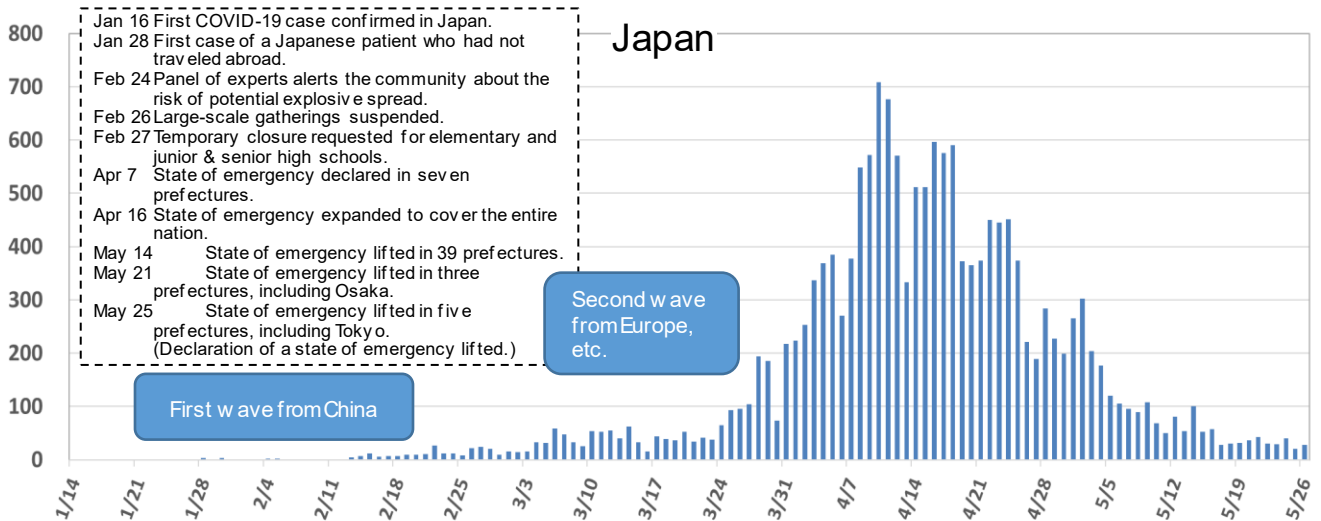
[Figure Estimated changes in the effective reproduction number (R_t) nationwide, as of May 28]





(ii) Infection situation worldwide

○ While the increase in infections in North America and Europe peaked in early April and is now slowing gradually, infections are continuing to spread in emerging nations such as Brazil, Chile, Mexico, and Peru in South America; South Asia; the Middle East; and Africa.

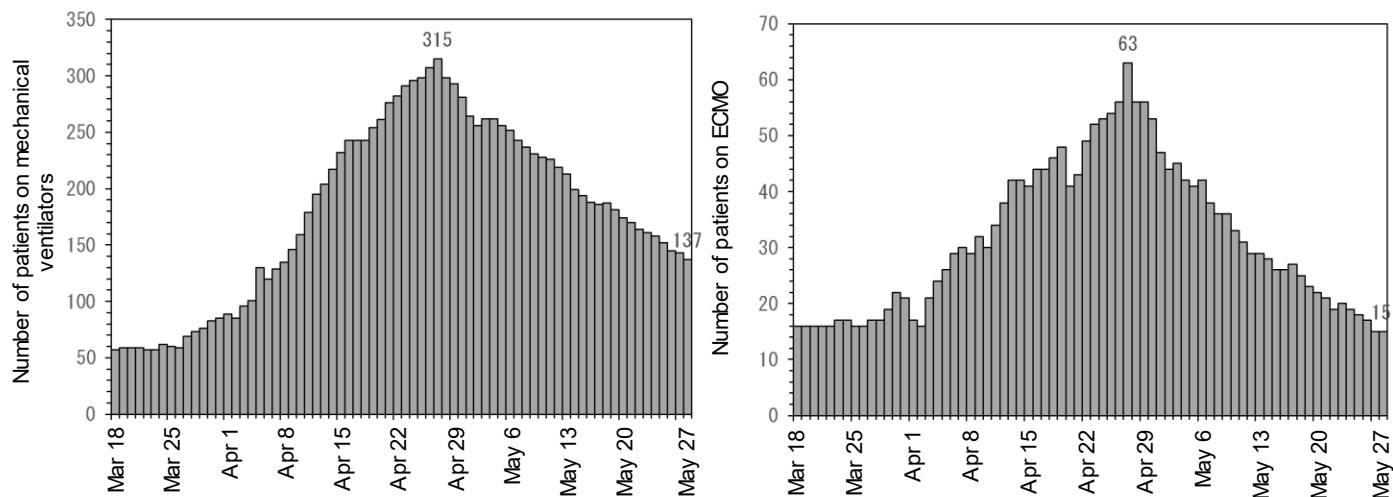


(2) Systems for delivering medical care

○ Since late March, hospital beds were tight particularly in major metropolitan areas, Hokkaido, and elsewhere, but each prefecture worked to establish a system to deliver necessary medical care under the state of emergency declaration. As of May 21, approximately 31,000 hospital beds are estimated to have been secured.

○ Both the number of hospitalized patients and the number of patients with severe symptoms showed significant downward trends.

[Figure 5 Trend in the number of confirmed patients requiring mechanical ventilators across Japan (left), Trend in the number of patients on ECMO across Japan (right)]



* Calculations by "Japan ECMOnet for COVID-19" of The Japanese Society of Intensive Care Medicine.

3. Current evaluation of the trends thus far in the number of new infections and deaths

(1) Trends in the number of new infections and deaths

- Compared to Western developed countries, novel coronavirus disease control in Japan has been able to suppress the increase in new infections, to protect the lives and health of residents, and to maintain at a low level the number of deaths and patients with severe symptoms.

- For the most part, the number of deaths in East Asia is low. In particular, the small number of infected patients and deaths in Taiwan is remarkable. This may be because Taiwan was well-prepared compared to Japan based on their experience with SARS, etc.

- Some of the reasons why the number of infections and deaths were low in Japan include:
 - Early detection of infected persons due to easy access to medical care under the national health insurance system, the high quality of medical care even in rural areas, etc.
 - The high standard of local public health centered around local public health centers.
 - The Japanese public's high standard of hygiene, originally different lifestyle habits, and willingness to comply with government requests.
 - The experience of responding to the Diamond Princess was used to inform subsequent response.
 - New infections were controlled by voluntary efforts made under as well as prior to the declaration of a state of emergency.

- Additionally, Japan's counter-cluster measures were effective in controlling the spread of infection.
 - (i) Large-scale spread of infection caused by a chain of clusters of patients was prevented.
 - (ii) Many clusters of patients were discovered, and their common characteristics such as the "3Cs," singing, and talking loudly were identified. Thus, measures to minimize the environments where clusters of infected patients (outbreaks) could occur were announced to the public.
 - (iii) Links were traced to more accurately estimate the epidemic situation in each region, which led to the early strengthening of measures in each region.

- Details will be provided in the "Addendum."

(2) Effects of the declaration of a state of emergency

- The main purposes of the request to stay home, etc. under the declaration of a state of emergency included:
 - (i) To reduce the number of new infections.
 - (ii) To prevent the collapse of the medical service system.

- The trend in the number of new infections captures the infection situation approximately two weeks prior. At this time, the peak in the number of new infections based on the reporting date occurred around April 10.

- The average length of hospitalization of inpatients is around two to three weeks, and the peak load on medical institutions due to hospitalized patients occurred around April 27.

- Regarding the trend in the "effective reproduction number," to take the example of Tokyo, new infections were actually believed to have begun a downward trend prior to April 7, when a state of emergency was declared. With the declaration, it steadily remained below 1 nationwide.

- The peak for "infection timing" of new infections was around April 1. This was the result of requests made for businesses to stay closed and the voluntary closure of businesses from early on in urban downtown areas where risks are high, as well as the result of cluster prevention efforts due to some level of behavior modification occurring among residents, including taking measures for 3C environments.

- The fact that the effective reproduction number remained below 1 under the declaration of a state of emergency implies that contact frequency remained low.

- Changes such as the following under the declaration of a state of emergency contributed to controlling new infections:
 - (i) Contact with people was continuously reduced, including through business activities such as sales and services.
 - (ii) Use of places and facilities where clusters tend to occur was effectively reduced.
 - (iii) The movement of people was reduced, stopping the spread of infection not only within major metropolitan areas but also to regional cities.
 - (iv) The entire nation was subject to the declaration of a state of emergency, which united the people in implementing measures.

- Impacts on the medical service system include:
 - (i) Major progress was made in establishing regional inpatient medical systems.
 - (ii) The medical service system was relieved from its once strained state.

(3) Issues that have become apparent

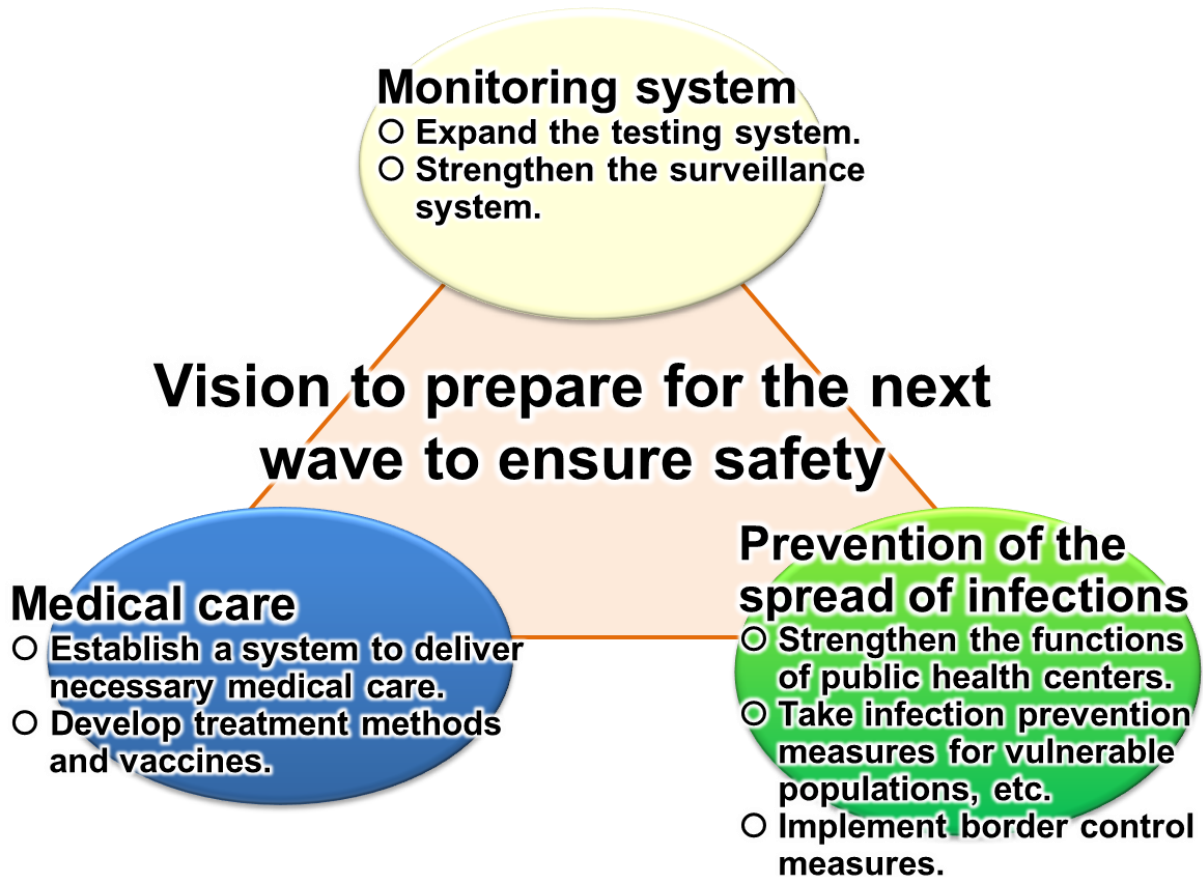
- Various issues have become apparent through the efforts made under the declaration of a state of emergency.

- In Japan, we have been implementing pandemic measures since the novel influenza of 2009. However, there were some areas where improvements were insufficient, and unlike the measures against the 2009 novel influenza, there is no readily available test kit for COVID-19, nor effective medication, vaccination, or other measures.

- Specifically, the time from consultation to testing was long, PCR and other tests were not conducted promptly, medical institutions were strained, hygienic materials could not be secured early on, the input rate of the infectious disease surveillance system dropped, and public relations and risk/crisis communication systems were unsatisfactory.

4. Policies going forward – Vision to prepare for the next wave to ensure safety—

- Countermeasures for various issues will be established in line with the "Vision to prepare for the next wave to ensure safety."



- (1) Further strengthening the "testing system" (including both administrative tests and clinical diagnostic tests) to prepare for the next wave
- (2) Further strengthening the "medical service system" to prepare for the next wave
- (3) Further strengthening the "function of public health centers," "surveillance," and "infection prevention measures" to prepare for the next wave
 - (i) Infection prevention measures for populations at high risk of developing severe symptoms when infected
 - The challenge is how to avoid chains of clusters. Measures will focus on the following.
 - i) Medical institutions
 - ii) Facilities for the elderly, people with disabilities, etc.
 - iii) bars and clubs with companions

(ii) Direction of the review of border control measures

- Based on the assumption that the spread of infection since late March was largely influenced by cases entering Japan from abroad, the review of border control measures must be carefully carried out.

(4) Promoting the establishment of treatment methods and medications as well as the development of vaccines, etc.

(1) Further strengthening the "testing system" to prepare for the next wave

- There were areas where PCR and other tests could not be conducted promptly from early to mid-April, which is the period during which the number of infected persons increased. Thus, the testing system will be strengthened further.

	Issue	Measures	Future direction
Consultation system	<p>Work overload for public health centers</p> <p>• PCR and other tests were not conducted promptly for those who needed to be tested.</p>	<ul style="list-style-type: none"> ○ Strengthen the public health center system. <ul style="list-style-type: none"> • Promote outsourcing of work. ○ Expand routes for seeking medical care that are not via call centers. <ul style="list-style-type: none"> • Promote the establishment of local outpatient/testing centers. 	<ul style="list-style-type: none"> ○ <u>Provide medical care early, and prevent the spread of infection by early diagnosis.</u> ○ <u>Clarify prodromal and initial symptoms; examine test targets.</u> ○ Work to <u>shorten the number of days required from consultation to testing.</u> ○ <u>Clarify the role of antigen testing as compared to PCR and other tests.</u> ○ Accelerate practical application of rapid sample collection (e.g., saliva tests) as well as rapid diagnosis. ○ <u>Deploy HER-SYS nationwide</u> to promptly and accurately understand the testing situation, etc.
Seeking medical care/sample collection	<p>Shortage of sample collection organizations</p>	<ul style="list-style-type: none"> ○ <u>Establish local outpatient/testing centers.</u> <ul style="list-style-type: none"> • Introduce a drive-through method, etc. ○ Secure human resources: reinstatement of nurses, utilization of dentists, etc. ○ Provide personal protective equipment (e.g., masks and gowns). 	
Testing system	<p>Lack of testing institute capacity</p>	<ul style="list-style-type: none"> ○ Support the introduction of testing equipment. ○ Entrust <u>private institutes with testing.</u> ○ Promote automation of testing. ○ <u>Utilize antigen testing.</u> ○ Develop human resources who can conduct PCR and other tests. 	
Collection of results	<p>Issues of speed and accuracy</p>	<ul style="list-style-type: none"> ○ Introduce <u>HER-SYS</u> (*). <ul style="list-style-type: none"> • Centrally manage and share information. (*) Health Center Real-time information-sharing System on COVID-19 	

(2) Further strengthening the "medical service system" to prepare for the next wave –Switching to and from the medical service system for normal times—

- In anticipation of a significant increase in infections, secure the necessary medical service systems. In doing so, review the minimum number of hospital beds and beds in lodging facilities for recuperation in order to prepare, and request that prefectures secure such beds.
- To prevent straining of the medical service system, criteria for issuing a "Medical Alert" will be considered per prefecture.

	Issue	Measures	Future direction
Inpatient medical systems	Strained medical institutions	<ul style="list-style-type: none"> ○ <u>Announce the number of hospital beds available and the number of inpatients/patients recuperating in lodging facilities/patients recuperating at home that can be served at peak times per prefecture.</u> ○ <u>Establish a headquarters for coordination (already established in 47 prefectures).</u> 	<ul style="list-style-type: none"> ○ While securing hospital beds, also ensure medical care for non-COVID-19 patients. ○ <u>Ensure smooth switching to-and-from the medical service system for normal times.</u>
Hospital bed coordination	<u>System for grasping the status of and coordinating available hospital beds</u> <ul style="list-style-type: none"> • Information is not shared among relevant institutions. 	<ul style="list-style-type: none"> ○ With G-MIS (*), centrally grasp the status of and provide support for hospital's operational situations and the procurement of medical equipment (e.g., mechanical ventilators) and medical materials (masks, PPE, etc.) 	
Materials	<u>Securing of mechanical ventilators, ECMO, PPE, etc.</u> <ul style="list-style-type: none"> • Secure the materials, etc. that will be needed at peak times. 	(*) Gathering Medical Information System on COVID-19	
Human resources	Securing of medical personnel		

(3) Further strengthening the "function of public health centers," "surveillance," and "infection prevention measures" to prepare for the next wave

○ In anticipation of an increase in infections, increase the level at which counter-cluster measures can be taken.

	Issue	Measures	Future direction
Strengthen the system and redistribute the work of public health centers	System for active epidemiological investigation	<ul style="list-style-type: none"> ○ Promote entrustment and outsourcing of call center work. ○ Develop human resources. 	<ul style="list-style-type: none"> ○ Dramatically strengthen counter-cluster measures by strengthening the public health center system and by utilizing ICT. ○ <u>Grasp trends in the infection situation, etc. promptly and accurately</u> while reducing the burden on medical care sites. ○ <u>Develop measures under (5) and (6) below.</u>
Utilize ICT	Issues around ascertaining the situation	<ul style="list-style-type: none"> ○ Utilize <u>apps for confirming contact.</u> 	
Strengthen surveillance	Issues around data collection and reporting	<ul style="list-style-type: none"> ○ Introduce <u>HER-SYS</u> nationwide. • Collect and share information effectively and efficiently. 	
Strengthen infection prevention measures	Chains of clusters occurring frequently in medical institutions, facilities, etc. Cases entering from abroad	<ul style="list-style-type: none"> ○ Take infection prevention measures in medical institutions as well as in facilities for the elderly and people with disabilities, etc. ○ Discuss movement across borders. 	

(4) Promoting the establishment of treatment methods and medications as well as the development of vaccines, etc.

○ Aim to overcome the infectious disease by first developing effective treatment methods and medications while strongly promoting the development of vaccines, etc. and establishing a system for research.

	Issue	Measures	Future direction
Severe symptom development mechanism clarification	The mechanism of developing severe symptoms is unclear.	○ Conduct research to establish accurate indicators of severity.	○ Intervene early to prevent the development of patients with severe symptoms and deaths. ○ <u>Develop indicators of severity, treatment methods, medications, etc. promptly and efficiently.</u>
Treatment method/medication development	There are no treatment methods/medications.	○ <u>Pharmaceutical approval has been granted for Remdesivir.</u> ○ <u>Clinical trials are being carried out for favipiravir (Avigan), ciclesonid, etc. for early approval.</u>	
Develop vaccine development	There is no vaccine, either.	○ <u>Secure the vaccines that people need "as soon as possible," and establish a system for providing vaccinations promptly.</u>	○ <u>Develop vaccines as soon as possible, strengthen the supply system, and establish a system for providing vaccines.</u>
Research system	Insufficient research system	○ Establish a system for collecting clinical information, etc.	○ Establish an <u>All-Japan</u> system for infectious disease research that <u>plans research projects with speed and mobility, organizes scattered data, and coordinates.</u>

(5) Infection prevention measures for populations at high risk of developing severe symptoms when infected

- This infectious disease is known not to be transmitted by approximately 80 percent of those who become infected; rather, it spreads through chains of clusters of infected patients generated by a portion of the remaining 20 percent of infected people.
- To prevent the spread of infection, the challenge is to prevent chains of clusters of patients. We must continue to issue alerts and focus measures on places where clusters of infected patients have occurred.
- It is important to investigate specifically in which kinds of environments the infection has spread. As they are places where clusters of infected patients have occurred, infection control measures in medical institutions as well as in facilities for the elderly and people with disabilities, etc. shall be established.

(i) Infection prevention measures in medical institutions

- Factors that have contributed to the spread of infection in medical institutions:
 - Presymptomatic patients with mild symptoms have gone unnoticed.
 - Use of dressing rooms (locker rooms).
 - Small break rooms.
 - Shared use of computers, mice, printers, etc.
 - Handwashing was neglected during night shifts when there are fewer staff members.
 - Disinfectants, etc. could not be set out because there were patients who were unable to communicate, or it was necessary to prevent accidental ingestion by residents.
 - Staff members had to continue to work despite feeling unwell.
- All medical institutions must thoroughly implement basic infection prevention measures.
- When infection occurred in medical institutions and facilities, advice from external experts was effective. Thus, core human resources should be developed in advance.
- Develop risk management awareness, leadership, etc. among the directors of hospitals, facilities, etc.

(ii) Infection prevention measures in medical institutions as well as in facilities for the elderly and people with disabilities, etc.

- Potential transmission routes in infections in facilities are, generally speaking, infection from service providers, infection from users, and infection from visitors. To prevent infection from service providers and users, appropriate infection prevention measures such as handwashing, proper wearing of masks, and avoiding the "3Cs" must be thoroughly implemented. Additionally, to prevent infection from visitors, temporary prohibition of visitors or restrictions on the number of visits and visitors must continue to be considered.
- Measures such as securing human resources and materials, strengthening infection prevention measures in the facility, and securing alternative services must be prepared in anticipation of cases of infection occurring at the facility.

(iii) Infection prevention measures in the case that clusters of infected patients occur

- Clusters of infected patients (outbreaks) are known to have occurred in bars and clubs with companions that operate late at night, and effective infection prevention measures must be considered thoroughly.

(6) Review of border control measures

- A decrease in the number of infections has been reported in neighboring countries, and discussions are expected to begin regarding the movement of people across borders.
- Resuming movement to and from abroad may trigger another wave of infections in Japan.
- Before implementing measures, thorough discussions must be held within the government to determine the international trends in measures, and the government must establish its ideas about opening and preventing the spread of infection as well as restricting entry once again when the load on medical institutions increases due to the spread of infection.
- For the time being, the relaxation of restrictions should be gradual, limiting the number of people who may enter Japan to a specific number.

5. Gradual transition in the lives of residents and business activities after the declaration of a state of emergency was lifted

- While socioeconomic activities are expected to increase rapidly, balancing them against infection prevention is the critical challenge to prevent the next wave of infections.
- The lives of residents and business activities must be transitioned gradually based on the risk of infection.

(1) Considerations regarding the lives of residents

- In all regions of Japan, each individual must:
 - Continue to avoid the "3Cs" and implement basic infection prevention measures such as "keeping physical distance," "wearing a mask," and "washing one's hands."
 - Continue to practice the "new lifestyle" in one's daily life.
- For a certain period of time, avoid movement between prefectures that have been designated Prefectures under Specific Cautions.
- Avoid the use of places where clusters of patients have occurred for a certain period of time.

(2) Considerations regarding business activities

- Regarding the development of guidelines for each industry to prevent infection, over 100 guidelines have already been developed.
- Each workplace should thoroughly implement infection prevention measures based on infection prevention guidelines.
- Regarding the holding of events, the government's "Basic Policies for Novel Coronavirus Disease Control" describes how to gradually ease restrictions. The government and prefectures will make specific requests for cooperation to organizers, etc.

6. Response by the prefectures, etc.

- It is considered to be the role of the prefectural governors to take the lead in requesting measures in each region. Sufficient preparations for the next wave must be made under the leadership of the prefectural governors.

- The Expert Meeting created the "Checklist for developing systems in prefectures to prepare for the next wave" and "Efforts in the prefectures, etc." as a reference for prefectures in their efforts.

7. Conclusion

- Great caution is needed to prevent the occurrence of new clusters of infected patients.
- In fact, some regions are showing a trend of resurgence in infections. The trends in the "number of new infections" and the "percentage of persons whose transmission route has not been identified" must continue to be monitored closely.
- Now that the number of new infections is showing a decreasing trend to some degree, we must go over the issues we have seen thus far and use this time effectively as a time of preparation, such as by establishing a system to deliver necessary medical care to prepare for the next wave. Strengthening the personnel system is particularly important.