Eleven things you need to know NOW about COVID-19 (As of June 2021)

Number of cases and virulence of COVID-19

1. How many people have been diagnosed with COVID-19 in Japan?
2. How many people will become very sick or die after being diagnosed with COVID-19?
3. Who is at higher risk for developing severe COVID-19 illness ?
4. Is the number of individuals diagnosed with COVID-19 higher in Japan than in other countries?

Infectivity of COVID-19

5. How long does a person with COVID-19 remain infectious?
6. Does everyone with COVID-19 infect others?
7. What precautions should we take to prevent the spread of COVID-19?

Testing and Treatment for COVID-19

8. What tests are being used to diagnose COVID-19?
9. What are the treatment options for COVID-19?
10. What is the COVID-19 vaccine? How does the vaccination rollout work ?

Variants of COVID-19

11. What is known about the COVID-19 variants?

1. How many people have been diagnosed with COVID-19 in Japan?

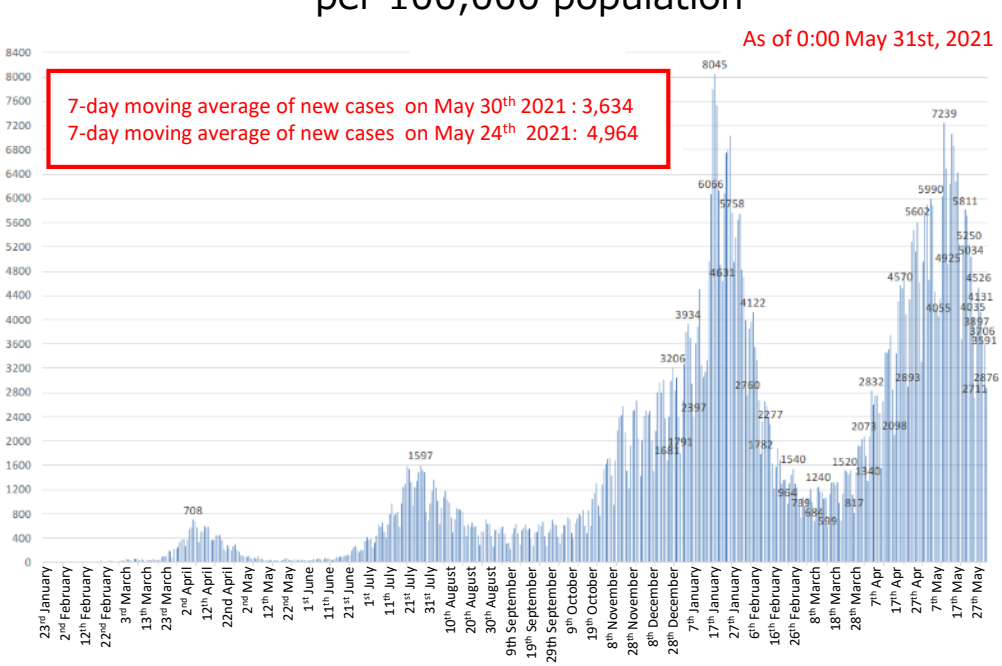
As of May 31st 2021, **741,524 people have been diagnosed with COVID-19 in Japan.**
This accounts for 0.6% of the total population.

For latest updates, please refer to the following link:
https://www.mhlw.go.jp/stf/covid-19/kokunainohasseijoukyou.html

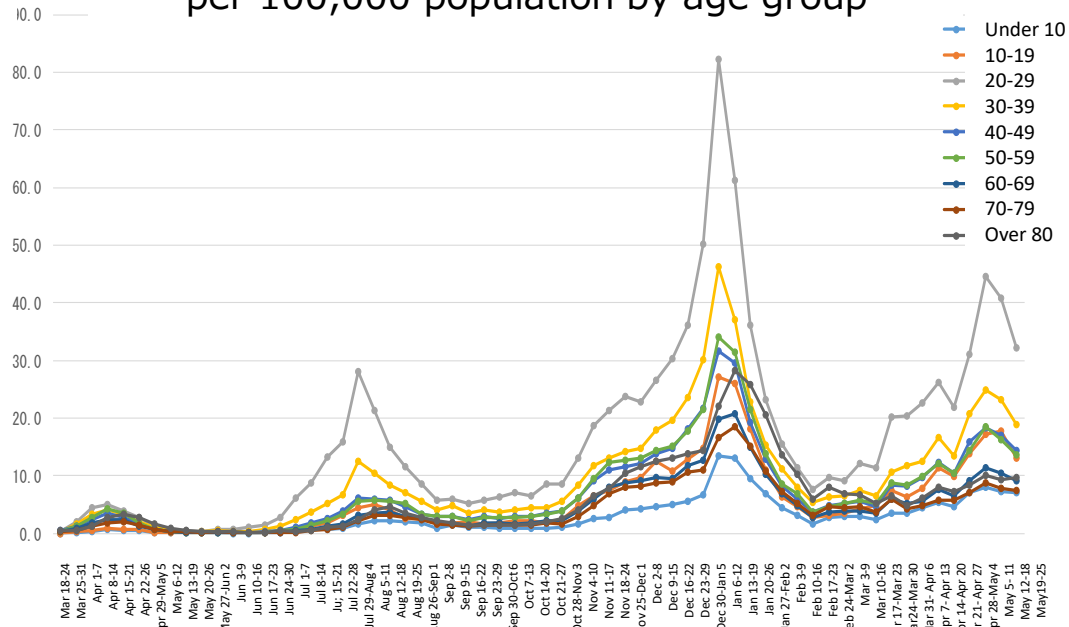
*The number of cases include only those who tested positive. Therefore it may miss those people who were actually infected but without symptoms and therefore did not seek medical care.

* As of 00:00 May 31st, 2021.

Number of newly confirmed cases per 100,000 population



Number of newly confirmed cases per 100,000 population by age group



Source: Published data from the Ministry of Health, Labour and Welfare

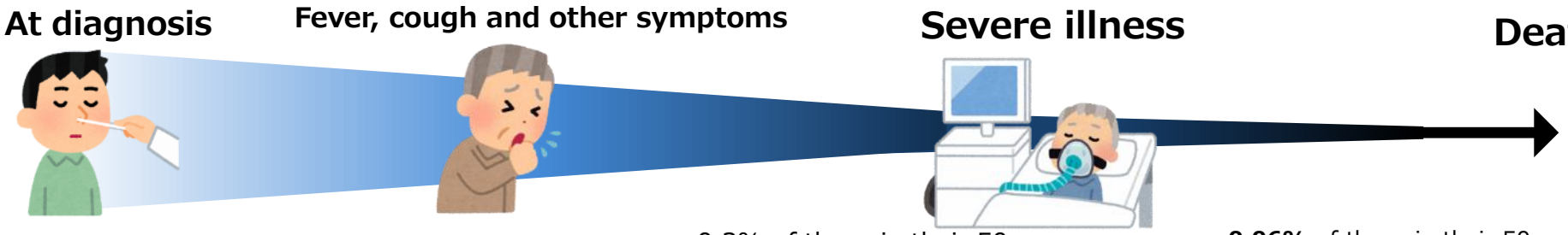
2. Among those diagnosed with COVID-19, how many people will get very sick or die?

Among those diagnosed with COVID-19, **proportion of individuals getting severely ill or die significantly differs by age**; **overall severity and case fatality rates seem to have been in declining trends compared to those at the beginning of the pandemic**.

Among those diagnosed with COVID-19 after June 2020,

- Severity rate is approximately 1.6% (**0.3% in those in age 50 or younger, 8.5% in those over 60s**)
- Case fatality rate is approximately 1.0% (**0.06% in those in age 50 or younger, 5.7% in those over 60s**)

* "Severe illnesses" include either one or more of followings: admission to the Intensive Care Units, use of respirators, or deaths.



0.3% of those in their 50s or younger
8.5% of those over age 60

0.06% of those in their 50s or younger
5.7% of those over age 60

Severity rates among newly diagnosed cases (%)

Age / Month	<10	10 -19	20 -29	30 -39	40 -49	50 -59	60 -69	70 -79	80 -89	90-	Total
Jun.–Aug.	0.09	0.00	0.03	0.09	0.54	1.47	3.85	8.40	14.50	16.64	1.62
Jan.–Apr.	0.69	0.90	0.80	1.52	3.43	6.40	15.25	26.20	34.72	36.24	9.80

Case fatality rates among newly diagnosed cases(%)

Age / Month	<10	10 -19	20 -29	30 -39	40 -49	50 -59	60 -69	70 -79	80 -89	90-	Total
Jun.–Aug.	0.00	0.00	0.01	0.01	0.10	0.29	1.24	4.65	12.00	16.09	0.96
Jan.–Apr.	0.00	0.00	0.00	0.36	0.61	1.18	5.49	17.05	30.72	34.50	5.62

Source: Tables created from data presented at the 11th Advisory Board (Presented by Professor Nishiura, Kyoto University) on October 22nd, 2020

3. Among those diagnosed with COVID-19, who is at increased risk for severe illness and death ?

Among those diagnosed with COVID-19, **the elderly, those with underlying medical conditions, and some pregnant women in their third trimesters are more likely than others to develop severe illness or die.**

Comorbidities known to cause more severe illness include:

Chronic Obstructive Pulmonary Diseases (COPD), Chronic Kidney Diseases, Diabetes, Hypertension, Cardiovascular diseases, Obesity, and Smoking.

Proportion of individuals becoming severely ill by age group
(shown as a relative risk when the risk of those in their 30s is considered as a reference (1.00))

Age	0-9	10-19	20-29	30-39	40-49	50-59	60-69	70-79	80-89	90+
Severity rates	0.5	0.2	0.3	1	4	10	25	47	71	78

Comorbidities known to cause more severe illness:

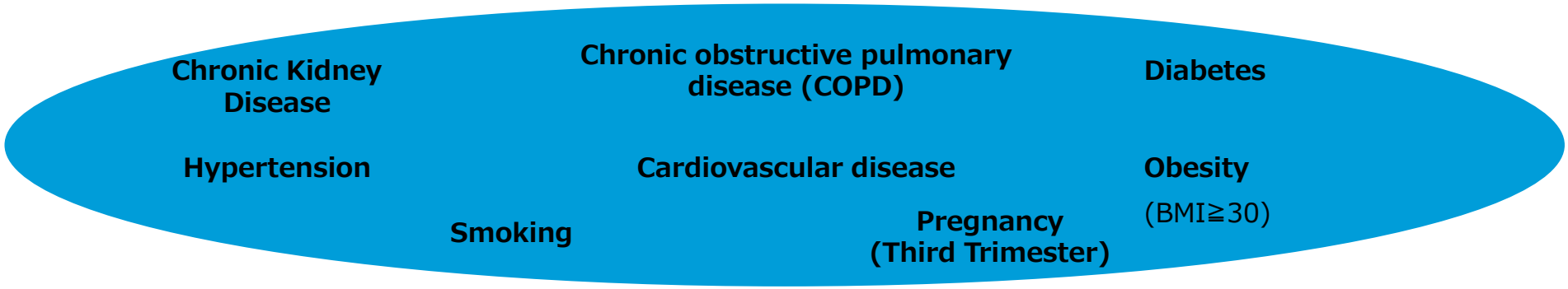
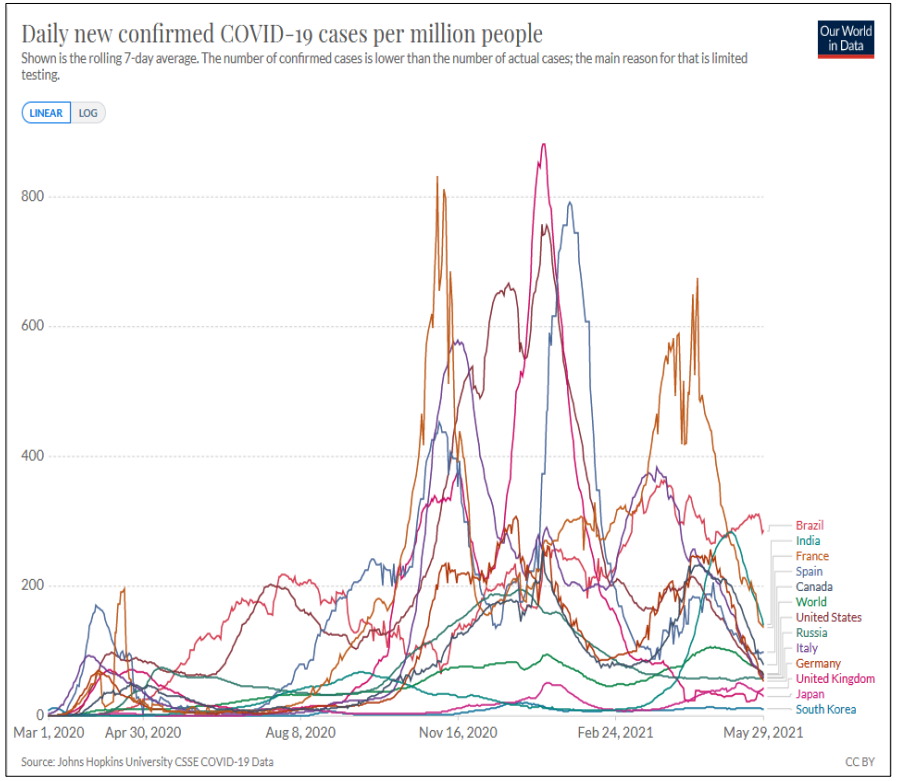


*Table created from data presented at the 11th Advisory Board (Presented by Professor Nishiura, Kyoto University) on October 22nd , 2020, and from the “Clinical Management of Patients with COVID-19” Version 5.0

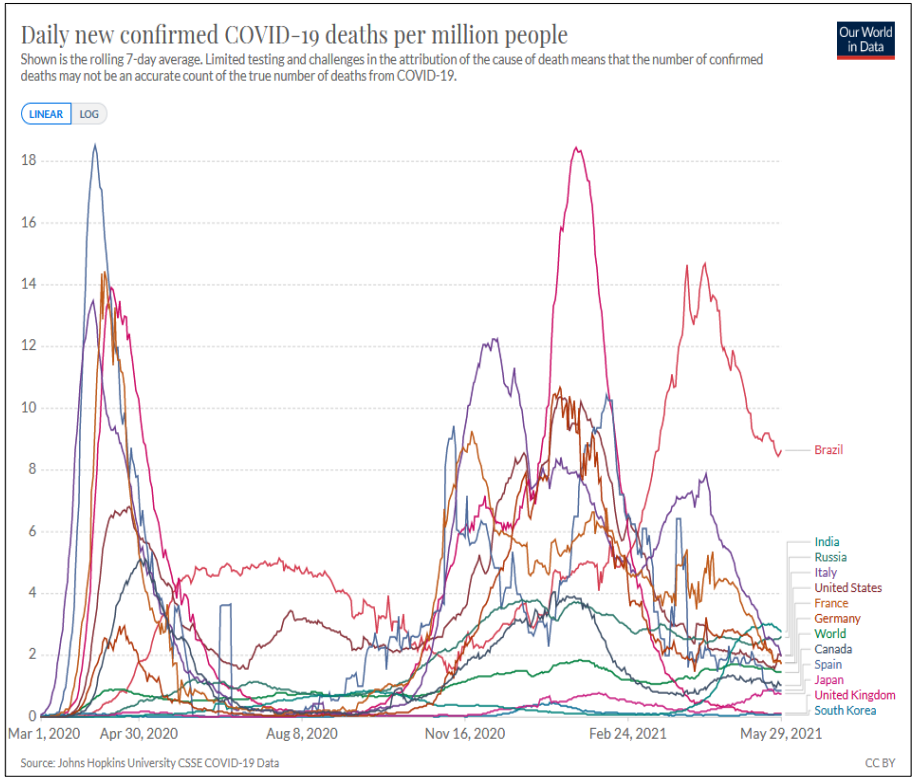
4. Is the number of individuals diagnosed with COVID-19 higher in Japan than in other countries ?

The number of confirmed cases and deaths per 1 million population in Japan have remained low compared to other countries.

Number of new cases per 1 million population (7-day moving average)



Number of new deaths per 1 million population (7-day moving average)



Source: Our World in Data (As of May 31st, 2021)

5. How long does someone with COVID-19 remain infectious?

Individuals with COVID-19 become infectious from **2 days prior to until approximately 7 to 10 days** after the onset of symptoms.※

Viral shedding is believed to be particularly high around the time of symptom onset.

Therefore, individuals diagnosed with COVID-19 should **refrain from going out for non-urgent reasons, regardless of symptoms, to stop the spread of infection**.

* From "Clinical Management of Patients with COVID-19." Version 5.0.

6. What proportion of individuals with COVID-19 ends up infecting others?

Less than 20% of individuals diagnosed with COVID-19 infect others, while others do not.

Therefore, unless a super-spreading event where an individual with COVID-19 infect many others in an environment like 3Cs without proper precautions happens, spread of SARS-CoV-2 (which causes COVID-19) could be controlled.

You are strongly encouraged to take precautions such as not going out for non-urgent purposes when you are sick, and wearing a mask when meeting with others.

*Wearing masks reduce the amount of virus inhaled by individuals in close proximity to those with COVID-19. (By 60-80% when worn by individuals with COVID-19, and by 20-40% when worn by someone contacting with individuals with COVID-19).

Ueki, H., Furusawa, Y., Iwatsuki-Horimoto, K., Imai, M., Kabata, H., Nishimura, H., & Kawaoka, Y. (2020). Effectiveness of Face Masks in Preventing Airborne Transmission o SARS-CoV-2. *mSphere*, 5(5), e00637-20.

7. What precautions should we take to prevent the spread of COVID-19?

SARS-CoV-2 (a virus known to cause COVID-19) is generally thought to be transmitted by droplets or by close contact with an infected individual. This is why the risk of infection increases in a 3Cs (Closed spaces, Crowded places, Close-contact settings) environment.

Situations such as social gatherings, long feasts in large groups, having conversation without masks, living together in small limited spaces, and switching locations also increase the risk of infection and should be avoided.

"5 situations" that increase the risk of infection

Situation ① Social gatherings with drinking alcohol

- Drinking alcohol improves mood and at the same time decreases attention. In addition, hearing is dulled and it leads to speaking in a louder voice.
- The risk of infection increases when large numbers of people are in a small space for a long time.
- In addition, sharing glasses and chopsticks increases the risk of infection.

Situation② Long feasts in large groups

- Long-term meals, dinner receptions, drinking alcohol at night increase the risk of infection compared to a short meal.
- The risk of infection is increased by eating and drinking in a large group of people, for example, 5 or more people, because in groups you have to talk louder and droplets of saliva spread more often.

Situation③ Conversation without a mask

- Talking at close range without a mask increases the risk of airborne or micro-droplet infection.
- Cases of infection without masks were observed during gatherings in karaoke machines.
- Please be careful when traveling by car or bus.

Situation④ Living together in a small limited space

- Living together in a small limited space increases the risk of infection because the enclosed space is shared by several people for a long time.
- There have been reports of suspected infections in common areas such as dormitory bedrooms and bathrooms.

Situation ⑤ Switching locations

- When you move to another location, such as when you take a break in a workplace, the risk of infection may increase due to the feeling of relaxation and changes of the environment.
- Suspicious cases of infection were identified in breaking rooms, smoking areas and changing rooms.

8. What tests are being used to diagnose COVID-19?

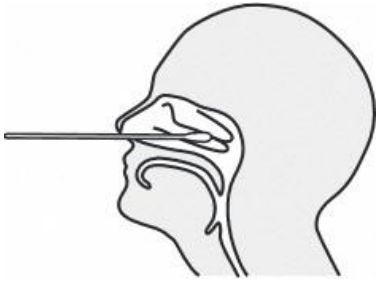
Tests for diagnosing COVID-19 include PCR test, qualitative antigen test, and quantitative antigen test. These tests are all designed to detect SARS-CoV-2 virus (which causes COVID-19) in one's body and therefore can be used to see if someone is currently infected with the virus. Recent development of new method has enabled use of saliva and nasal cavity swab samples in selected situations and selected patient groups.

Antibody tests are only used to see if a person has previously been infected with SARS-CoV-2 (virus that causes COVID-19). Antibody tests are not for use to diagnose acute infection.

Intended to use for…		PCR test (including LAMP test)			Antigen test (Quantitative)			Antigen test (Qualitative)		
		Nasopharynx	Nasal cavity	Saliva	Nasopharynx	Nasal cavity	Saliva	Nasopharynx	Nasal cavity	Saliva
Symptomatic Individuals	Within 9 days of symptom onset	○	○	○	○	○	○	○ *1	○ *1	×
	10 days or more from symptom onset	○	○	×	○	○	×	△ *2	△ *2	×
Asymptomatic individuals		○	×	○	○	×	○	× *3	× *3	×

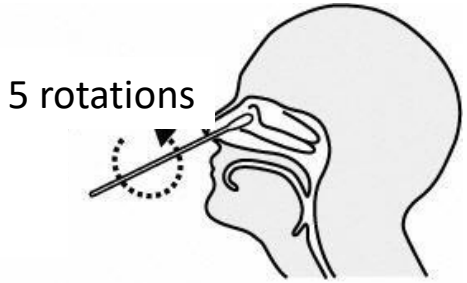
*1 Can be used within 2-9 days after symptom onset * 2 Additional nasopharyngeal PCR tests is advised when tested negative. *3 Not advised to use for confirmatory tests. Can be used as screening tests in limited settings such as hospitals or nursing homes in disease spreading areas on condition that preventive measures should still be continued for individuals tested negative.

Example of Specimen Collection for Qualitative Antigen Test



Insert a swab through the nose and rub th nasopharynx several times
(Performed by a healthcare provider, only)

Nasopharyngeal specimen collection



Insert a swab about 2 cm from the nose, rotate it 5 times, and let it stand for about 5 seconds.
(Self specimen collection is possible)

Nasal cavity Specimen collection

Figures: Courtesy of Denka Co., Ltd.

9. What are the treatment options for COVID-19?

Most patients with mild COVID-19 recover without any specific treatment. So only supportive therapy such as antipyretics would be provided when necessary. In case of respiratory failure, oxygen therapy along with antivirals, steroids(to control inflammation), or immunomodulators ※1 will be given. And if not responding well enough, intensive care with mechanical ventilation might be an option. Establishment of treatment options described above seems to have resulted in low case fatality rates for the hospitalized COVID-19 patients. Be sure to consult your GP or nearby clinic in case you have fever, cough or symptoms suggestive of COVID-19.

* 1 As of May 31st, 2021, drugs approved for the treatment of COVID-19 in Japan include Remdesivir, Dexamethasone, and Baricitinib (newly approved on Apri.23rd, 2021).
* 2 The percentage of COVID-19 cases who require intensive care or die is about 1.6% (0.3% for those in their 50s or younger, 8.5% for those in their 60s or older).

Treatment trends and case-fatality rates for hospitalized patients with COVID-19 (Results from the COVID-19 Registry Japan* 4)

Results showed that cases admitted after June 2020, compared to those before June 2020,
- were more likely to be treated using Remdesivir (approved for the treatment of COVID-19) and steroids.
- had lower case-fatality rates in all severity groups (mild, moderate, and severe) in all age groups.

Mild / moderate cases at admission

		Admitted before June 1st, 2020	Admitted from Jun. 1st to Dec. 31st, 2020
Medication Administered	Remdesivir※6	**0.4%**	**13.9%**
	Steroids (Expect for Ciclesonide)	**6.9%**	**40.3%**
Case-fatality rates after admission (by age group)	0-29	**0.0%**	**0.0%**
	30-49	**0.2%**	**0.1%**
	50-69	**1.3%**	**0.3%**
	70-	**9.7%**	**5.7%**
	All ages	**2.4%**	**1.3%**

Severe cases at admission ※5

		Admitted before June 1st, 2020	Admitted from Jun.1 to Dec. 31, 2020
Medication Administered	Remdesivir	**1.3%**	**39.2%**
	Steroids (Expect for Ciclesonide)	**26.0%**	**74.1%**
Case-fatality rates after admission (by age group)	0-29	**1.9%**	**0.0%**
	30-49	**1.3%**	**0.6%**
	50-69	**9.1%**	**3.7%**
	70-	**30.0%**	**17.3%**
	All ages	**17.1%**	**9.8%**

*4. Based on data registered by February 15th, 2021 to the "COVID-19 Registry Japan (Principal Investigator: Dr. Norio OHMAGARI)" (Funded by the Health and Labour Sciences Research Grants)
*5. "Severe cases at admission" refers to either one or more of the followings: On supplemental oxygen therapy, On ventilators, SpO2(Oxygen Saturation) of 94% or less on room air, or respiratory rates ≧24 breaths per minute.
*6. Only include administration of drugs for the treatment of COVID-19. For steroids, pre-admission use for purposes other than COVID-19 is excluded.

10. What is the COVID-19 vaccine? How does the vaccine rollout work ?

○**About the COVID-19 vaccine**

As of May 31st, 2021, two COVID-19 vaccines developed by Pfizer Inc. and Moderna Inc. are being rolled out. Both of them are new types of vaccine called “messenger RNA vaccines”.

Normally two doses are administered three weeks apart for the Pfizer vaccine, and four weeks apart for the Moderna vaccine.

○**Efficacy**

Both of the vaccines are effective in preventing COVID-19.

Vaccinated individuals were reported to be less likely to develop COVID-19 symptoms (such as fever or coughs) compared to unvaccinated individuals.　(Vaccine Effectiveness is reported to be around 95%)

○**Safety**

Localized pain in the injected sites, fatigue, and headache have been reported to occur in more than 50%, and muscle and joint pain, chills, diarrhea, and fever in more than 10% of vaccinated individuals. Most of these symptoms subside within a few days.

Cases of anaphylaxis (an acute allergic reaction) have also been reported.

Vaccination sites, clinics or hospitals providing vaccination are equipped with medicine and other supplies to respond immediately in case of anaphylaxis.

○**Vaccine rollout plan in Japan**

Vaccine rollout in Japan is scheduled from February 17th 2021 through February 28th 2022. Currently, vaccination for healthcare professionals and for the elderly are underway. Vaccination for the elderly was started on April 12th 2021 in selected municipalities and was expanded to other places in Japan from the beginning of May. The entire Japanese government has been working together to ensure all the elderly people who wish to get vaccines to finish their 2nd dose by the end of July.

12. What is known about the SARS-CoV-2 (virus that causes COVID-19) variants?

Viruses usually mutate and change gradually over time as they grow or spread. This leads to the emergence of new variants. SARS-CoV-2(virus that causes COVID-19) is believed to show approximately one base mutation in two weeks. Currently such newly emerging variants of SARS-CoV-2 have continuously been reported from all around the world and **we have to be more vigilant on such new variants than before.**

According to the experts, B1.1.7 lineage (Alpha variant) have almost replaced the original strain in Japan, accounting for more than 80% of newly reported cases except in some regions. The number of reported cases of B.1.617 lineage (including Delta variants) has also been increasing.

In response to this, the Ministry of Health, Labour and Welfare (MHLW) has been conducting a nationwide genomic sequencing of the SARS-CoV-2 to monitor for the variants. The MHLW communicates closely with the World Health Organization (WHO) and experts to analyze and characterize variants, and is strengthening the national surveillance system. The MHLW also strengthens its testing capacity and epidemiological investigation (tracing) when cases of such variants are reported to prevent further spread.

Preventive measures such as avoiding the “three Cs” (and "Five situations" that increase the risk of infection), wearing masks, and washing hands remain as effective against the variants. Therefore individuals are strongly encouraged to continue taking these precautions.

*1. B.1.1.7 lineage (Alpha variant) was previously referred to as “the variant first detected in the UK”, and B.1.617 lineage (including Delta variants) was previously referred to as “the variant first detected in India”.

*2. According to the experts, B.1.1.7 lineage (Alpha variant) has an expected reproductive number which is 1.32 times higher than that of the previously-circulating strain. As for severity, patients with this variant has an estimated relative risk of 1.4 (1.66 in those aged 40-64) that they already manifest severe symptoms such as pneumonia or worse at the time of diagnosis. Some studies show that the B.1.617 lineage (including Delta variants) has been replacing the circulating strains overseas, and this strain might be even more infectious and transmissible than the B.1.1.7 lineage (Alpha variant).