



# **Kanagawa Prefectural Government's Guideline for Novel Coronavirus Infection Control Medical and Welfare Workers Version Vol.1**

Health and Medical Services Bureau, Kanagawa Prefectural Government  
Kanagawa Pref.'s Medical Meeting for Infectious Diseases  
July 8, 2022

# Introduction ---Future society we should aim for



In our fight against the novel coronavirus to date, we have encouraged people to take anti-virus measures and tests, and restricted social activities to contain infections.

From now on, it will be important to bring people's activities back to normal and create a society where we live with the coronavirus.

We do not aim for a “zero-corona society” where no one gets infected.

Anyone could be infected, but the infected person should not be blamed for it.

As the first step in building such a society, we formulated this guideline to set out the idea for appropriate infection prevention measures for medical and welfare workers based on the accumulated evidences.

# 1 | Basic Idea

## Basic Stance

**We do not aim for a “zero-corona society”, where no one get infected.**

Infection to some people could occur at medical institutions/welfare facilities, but it is important to prevent them from developing into clusters.

Anyone could be the first person to develop symptoms (the first COVID-19-positive) in the facility. Organizational blaming/accusing attitude should be strictly restricted.

Since some people develop no symptoms, the first person found to have symptoms is not always the first one infected.

## Testing

Testing of people with no symptoms sometimes lacks credibility, and it is difficult to judge their infection.

Testing is mainly for people who have symptoms, and those in close contact with the infected and have high possibility of being infected.



## Anti-virus Measures

Practice basic anti-virus measures and receive vaccination as much as possible.

When working, always wear a mask which is more effective than a non-woven fabric mask in an appropriate manner.



When wearing an N95 mask, select one that fits your face.

# Basic Infection Prevention Measures

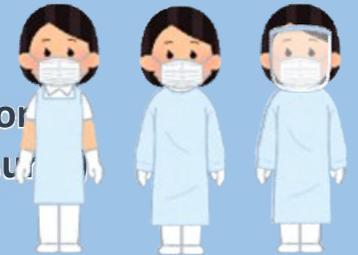
Patients/users/staff of medical institutions/welfare facilities should always wear a mask.



It is recommended that staff directly give care to patients, etc. should wear a mask more effective than a non-woven fabric mask in preventing aerosol exposure, and those who do not directly give care to patients, etc. wear a non-woven fabric mask.



If you are to be exposed to droplets, saliva, excrement, etc., wear personal protective equipment, such as gloves, and practice hand hygiene when wearing/taking off. (standard infection prevention measure)



Thoroughly practice hand hygiene. As for the environment, it is enough to clean it once a day.



Pay enough attention to ventilation and prevention of aerosol exposure by providing mechanical ventilation of 24-hour operation, opening windows in two directions, using air purifying machine/high-performance air filtration apparatus, etc.



Patients/users/staff of medical institutions/welfare facilities should receive vaccination as much as possible.



# Sufficient Ventilation

These are examples of measures for sufficient ventilation. Adopt any of them according to the situation.



Using mechanical ventilation equipment full-time



Opening windows in two directions



In a room with only one window, keeping a fan/circulator on toward outside



In a room without window or with a window that cannot be opened, using air purifying machine/air filtration apparatus

## <Note>

- Check and clean the mechanical ventilation equipment daily, such as a ventilation fan! 
- Provide ventilation to keep CO<sub>2</sub> concentration under 800ppm using a CO<sub>2</sub> concentration measuring device! 
- Close the door facing the corridor and provide appropriate mechanical ventilation, etc.! 

## 2 | Infection Prevention Measures at Medical Institutions for Outpatients

## 2-1 Infection Prevention Measures for Outpatients at Medical Institutions



### Equipment and environment

#### Daily measures

- Examine using mechanical ventilation of 24-hour operation, opening windows in two direction, using air purifying machine/high-performance air filtration apparatus, etc.
- If the room is well-ventilated and other patients/users have almost no exposure to aerosol, collective control of dialysis, etc. is possible.
- Setting entrance/exit or route for patients suspected of infection is not always necessary.
- Disinfection of the environment is not necessary in principle. Carry out cleaning once a day.
- **Plastic panels** (acrylic dividers) at the reception and measuring body temperature at the entrance are not always necessary.



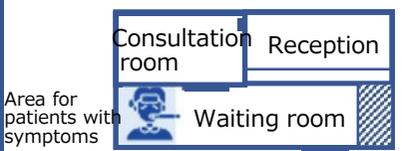
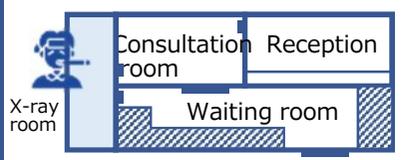
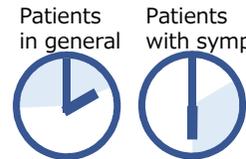
#### Measures when receiving COVID-19-positive patients, etc.\*

- Secure the red zone to isolate COVID-19-positive patients, etc. from other patients.
- Designate rooms for COVID-19-positive patients as the red zone and other spaces including corridor as the green zone.
- Thoroughly ventilate the red zone (especially where centralized air conditioning is used, confirm if the room is well-ventilated.)
- Containers for infectious waste can be placed in either the red zone or green zone. Make sure that patients do not touch them.

\*COVID-19-positive patients and those who have high possibility of being infected

## Examples of waiting room for outpatients

On condition that ventilation is sufficiently conducted\*

Layout A		<b>Designate seating with a social distance between patients</b> Have patients wear a surgical mask, if possible, and sit facing the same direction keeping a distance with each other. No need to separate areas for patients with symptoms from others.
Layout B	 <p>Area for patients with symptoms</p>	<b>Designate a waiting area for patients with symptoms</b> If a room is not available, designate a part of the room, for instance, an area far from the entrance as much as possible, for patients with symptoms to make their route not to overlap that of patients in general.
Layout C	 <p>X-ray room</p>	<b>Designate unused room as a waiting room for patients with symptoms</b> Designate a room as a waiting room for patients with symptoms to separate from other patients in general. There is no problem about using the same route to the room with other patients.
Layout D	 <p>Patients in general</p> <p>Patients with symptoms</p>	<b>Set consultation hours only for patients with symptoms</b> Set consultation hours only for patients with symptoms aside from that for patients in general.

## 2-2 Infection Prevention Measures at Medical Institutions for Outpatients



### When receiving patients and accompanying persons

#### Daily measures

- Wear a surgical mask or N95 respirator.
- Keep quiet when it is difficult to wear a mask.
- It is acceptable to separate patients suspected of infection or have possibility of transmitting others from patients in general, or set counseling hours for these patients aside from those for others.
- Confirm physical distance of accompanying persons and state of contact with the infected.



#### Measures when receiving COVID-19-positive patients, etc.

- Set individual room for dialysis, or different time from others
- If there are many COVID-19-positive patients, it is acceptable to put in a multiple-bed room.
- If there are many patients with high possibility of infection, they can be put in a multiple-bed room (not with COVID-19-positive patients).
- COVID-19-positive patients, etc. can be accompanied only when they need nursing/assistance.

## 2-3 Infection Prevention Measures at Medical Institutions for Outpatients



### Measures that staff should take

#### Daily measures

- Wear a surgical mask or N95 respirator.
- If the patient is not wearing a mask, wear an eye protector.
- It is not necessary to always wear a gown/gloves.
- When staff that have high possibility of infection\* work, they are strictly required to wear a surgical mask or N95 respirator.



#### Measures when there are COVID-19-positive patients, etc.

- When caring COVID-19-positive patients, etc., it is required to wear an N95 mask.
- When caring COVID-19-positive patients, etc. for a short time (e.g. for watching), wearing a surgical mask is acceptable.
- Confirm the proper way to wear an N95 mask beforehand.

# (Ref) Infection Prevention Measures at Medical Institutions for Outpatients

## When treating patients in general

Wear a **surgical mask**



## When treating COVID-19-positive patients, etc.

Wear an **N95 mask**

(do the same when treating patients who cannot wear a mask)



When there is a possibility to be exposed to droplets\*, wear an **eye protector**, too.

\*See P. 18 and 29

# 3 | Infection Prevention Measures at Medical Institutions for Inpatients

## 3-1 Infection Prevention Measures at Medical Institutions for Inpatients



### Equipment and environment

#### Daily measures

- Consider providing mechanical ventilation of 24-hour operation, opening windows in two directions, using air purifying machine/high-performance air filtration apparatus, etc.
- Provide even more sufficient ventilation in cafeteria, etc. where people take off their mask.
- Rehabilitation or recreational activities are possible if the room is well-ventilated and other patients/users have almost no exposure to aerosol.
- Disinfection of the environment is not necessary in principle. Cleaning should be done once a day.

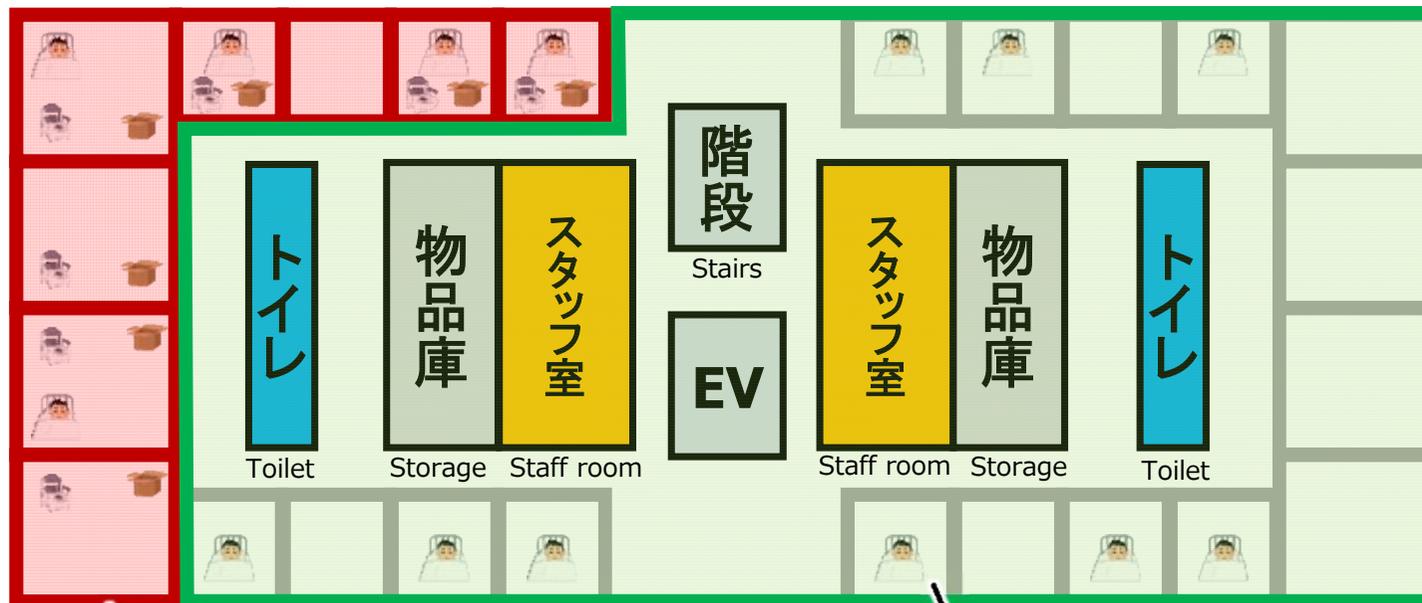


#### Measures when there are COVID-19-positive patients, etc.

- Secure the redo zone to isolate COVID-19-positive patients, etc. from other patients.
- Designate rooms for COVID-19-positive patients, etc. as the red zone and other space from the corridor as the green zone.
- Provide sufficient ventilation in the red zone (in the case of using centralized air-conditioning, confirm if the area is well-ventilated.)
- Containers for infectious waste can be placed in either the red zone or green zone. Make sure that patients do not touch them.

## (Ref) Zoning at Inpatients' Ward

Red zone should cover only inside of the rooms for COVID-19-positive patients, etc.



**Rooms to isolate infected patients, etc. (red zone)**

- ※ Cohort management possible  
(putting infected patients in the same room)
- ※ Sufficient ventilation required

**Rooms for patients in general (green zone)**

## 3-3 Infection Prevention Measures at Medical Institutions for Inpatients



### Meeting with visitors

#### Daily measures

- Wear a surgical mask or N95 respirator.
- Having meals in a group is possible if there are not COVID-19-positive patients, etc.
- Confirm physical distance of visitors and their state of contact with the infected
- Both patients and visitors are required not to take off the mask, eat and drink together, etc.



#### Measures when there are COVID-19-positive patients, etc.

- COVID-19-positive patients should stay in an individual room, but if there are many, they can be put in a multiple-bed room together.
- If there are many patients with high possibility of infection, they can be put in a multiple-bed room together (not with the infected)
- COVID-19-positive patients' meeting with family members should be refrained from, but it can be considered if family members can take anti-virus measures.

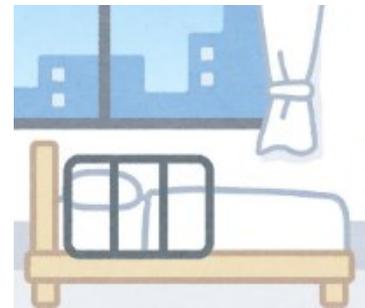
**Meeting with COVID-19-patients, etc.  
could be considered if family members  
can take anti-virus measures**

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**Meeting with non-COVID patients  
in a multiple-bed room should be  
arranged in another room, if possible**

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Both patients and visitors  
wear a surgical mask



- Meeting can be arranged if the patient is staying in an individual room

## 3-3 Infection Prevention Measures at Medical Institutions for Inpatients



### Measures that staff should take

#### Daily measures

- Wear a **surgical mask**.
- Wear an eye protector when the patient does not wear a mask, such as when assisting bath taking or having a meal.
- It is not necessary to always wear a gown/gloves.
- When staff with high possibility of infection work, they are strictly required to wear a mask more effective than a non-woven fabric mask.



#### Measures when there are COVID-19-positive patients, etc.

- Wear an N95 mask when caring COVID-19-positive patients, etc.
- When contacting time with the infected, etc. is short, such as when watching or serving a meal/cleaning a table, wearing a non-woven fabric mask is acceptable.
- Confirm proper way of wearing an N95 mask beforehand.

# (Ref) Examples of procedures that produce aerosol



When performing the following procedures, wear an **N95 mask** and **eye protector**



Tracheal intubation/extubation



Tracheal suctioning



Nebulizer therapy



Cardiopulmonary resuscitation



Manual ventilation



Urgent upper digestive tract endoscopy



Bronchoscopy



Excavation in a tooth, etc.

(Do the same in procedures other than the above if aerosol is produced)

## 4 | Infection Prevention Measures at Home for the Elderly /Persons with Disabilities, etc.

# 4-1 Infection Prevention Measures at Home for the Elderly/Persons with Disabilities, etc.



## Equipment and environment

### Daily measures

- Consider providing mechanical ventilation of 24-hour operation, opening windows in two directions, using air purification machine/high-performance air filtration apparatus, etc.
- Rehabilitation and recreational activities are possible if the room is well-ventilated and users have almost no exposure to aerosol.
- Setting entrance/exit/route for those with high possibility of infection is not always necessary.
- Disinfection of the environment is not necessary in principle. Cleaning should be done once a day.
- **Plastic panels (Acrylic boards)** at the reception or measuring body temperature at the entrance are not always necessary.



### Measures when there are COVID-19-positive patients, etc.\*

- Secure the red zone to isolate COVID-19-positive patients from other users.
- Designate rooms for the infected, etc. as the red zone and other space from the corridor as the green zone.
- Provide sufficient ventilation to the red zone (if the centralized air-conditioning is used, confirm if the area is well-ventilated.)
- Containers for infectious waste can be placed in either the red zone or green zone. Make sure that patients do not touch them.

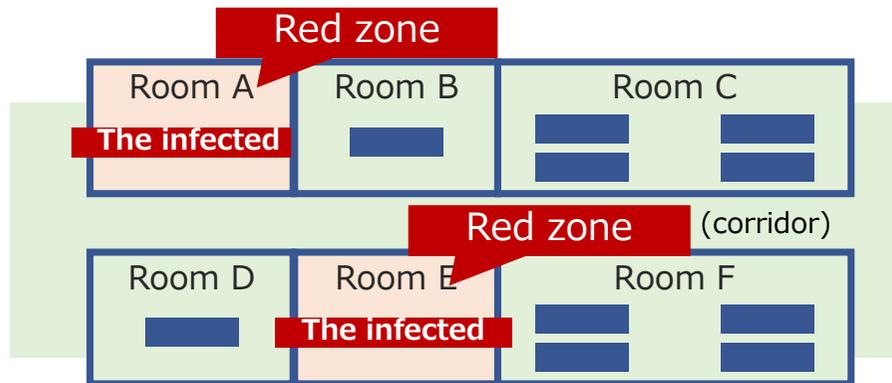
\*For ventilation, see page 5

\*COVID-19 positive patients and those with high possibility of infection

On condition that sufficient ventilation is conducted

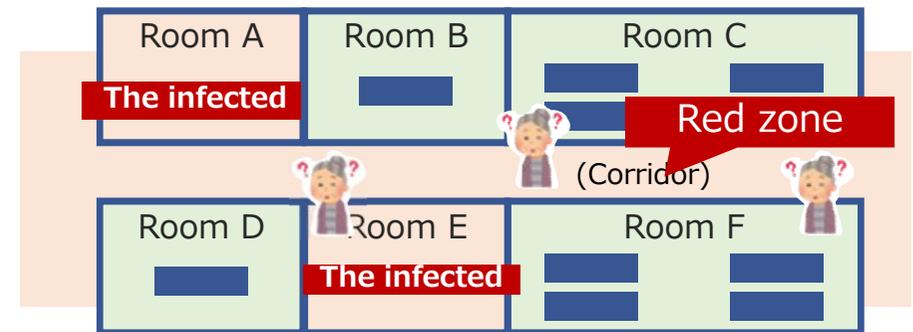
## When COVID-19-positive patients, etc. can stay in a room

When the infected can recuperate in their room, designate rooms of the infected as the red zone, and **the entire floor as the green zone.**



## In the cases other than the left

When COVID-19-positive patients, etc. are feared to transmit the virus outside of their room as they talk loudly, have difficulty in communication due to dementia, are unable to wear a mask, etc., designate the entire floor as the red zone to avoid contact between the infected and other residents.



## 3-2 Infection Prevention Measures at Home for the Elderly/Persons with Disabilities, etc.



### When meeting users/visitors

#### Daily measures

- Wear a surgical mask or N95 respirator.
- Separate day service users from residents.
- Having a meal in a group is possible if there are no COVID-19 positive patients, etc.
- Confirm physical condition of visitors and their state of contact with the infected.
- Users and visitors are required to wear a mask, not to eat and drink together, etc.



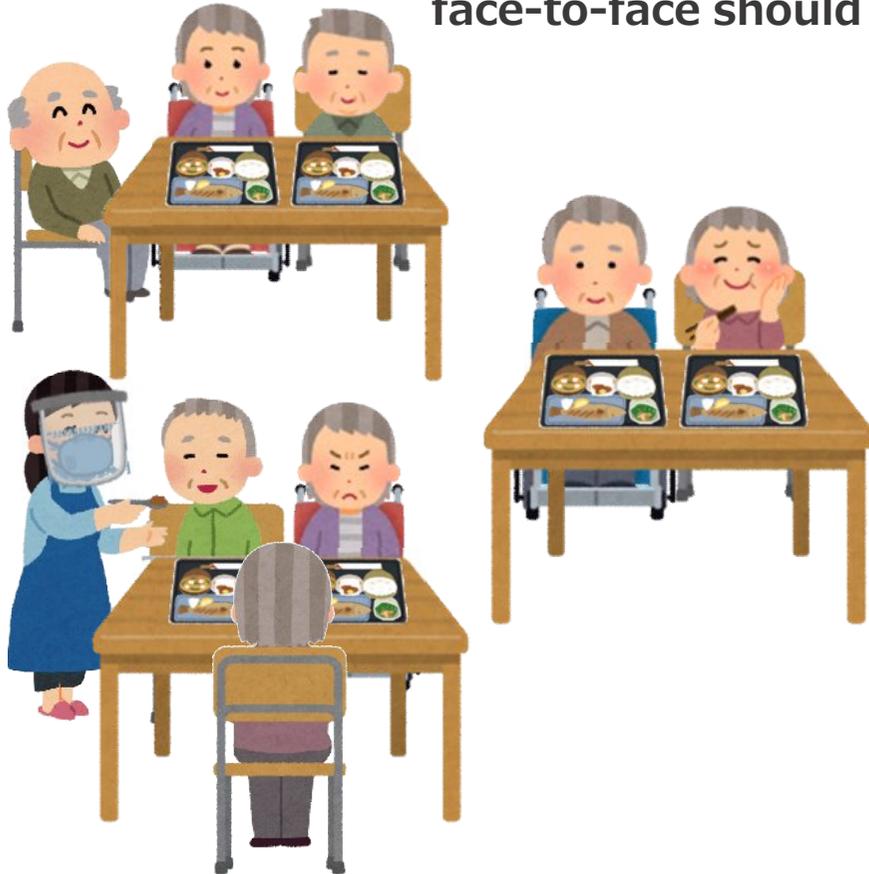
#### Measures when there are COVID-19-positive patients, etc.

- COVID-19-positive patients should stay in an individual room. If there are many infected people, they can be put in a multiple-bed room together.
- If there are many people with high possibility of infection, they can be put in a multiple-bed room together (not with the infected.)
- Meeting between the infected, etc. and their family is prohibited.

## (Ref) Having a meal in a group

On condition that sufficient ventilation is conducted

They should refrain from talking as much as possible. If it is difficult, eating face-to-face should be refrained from.



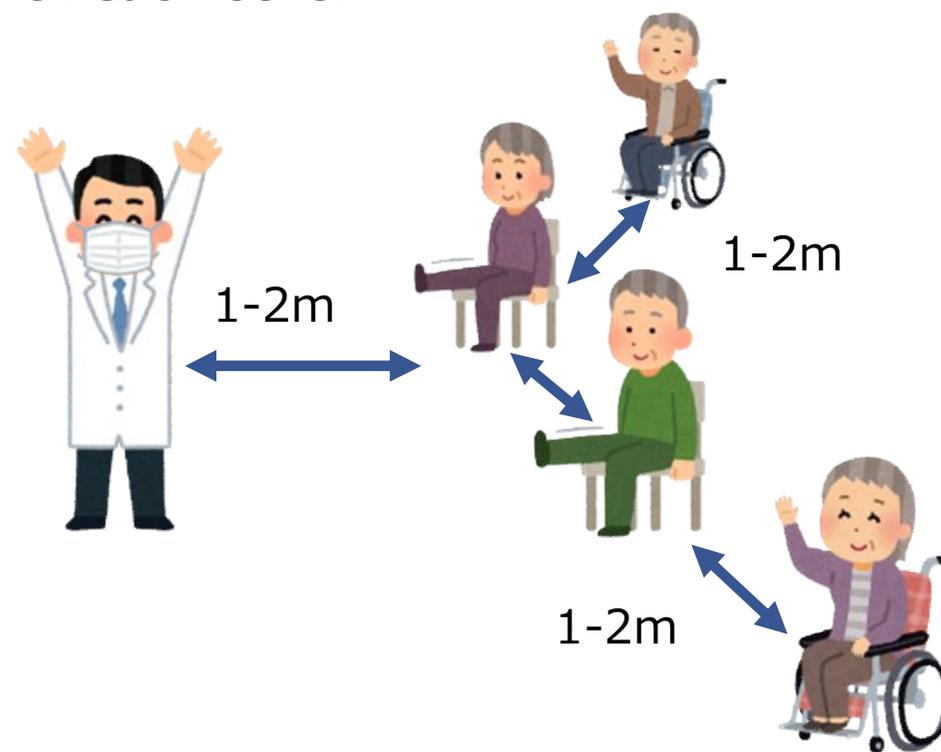
COVID-19 positive patients, etc. should eat in their room.



## Sharing play cards or chess board is acceptable

if users can avoid exposure to aerosol with each other

On condition that sufficient ventilation is conducted



On condition that  
sufficient ventilation  
is conducted

**Meeting with uninfected residents staying at a multiple-bed room should be arranged at a separate room, if possible**

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**Meeting with COVID-19-positive patients, etc. is prohibited in principle**

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- Both patients and visitors should wear a mask
- If using an individual room, use the resident's room



**All the people on board should wear a mask**

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- Set the vehicular air-conditioning to intake outside air
- Driver and accompanying staff should wear a mask

**When people on board cannot wear a mask, the vehicle should be even more ventilated**

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- Open the window for more ventilation
- Do not put too many people to avoid overcrowding

### 3-3 Infection Prevention Measures at Home for the Elderly/Persons with Disabilities, etc.



#### Measure that staff should take

##### Daily measures

- Wear a surgical mask or N95 respirator.
- When users do not wear a mask (e. g. when assisting bath taking, having a meal), wear an eye protector.
- It is not necessary to always wear a gown/gloves.
- When staff with high possibility of infection\* work, it is strictly required to wear a surgical mask or N95 respirator.



##### Measures when there are COVID-19-positive patients, etc.

- Wear an N95 mask when giving care to COVID-19-positive patients, etc.
- When contacting with the infected, etc. in a short time (e.g., watching, serving a meal/cleaning a table), wearing a non-woven mask is acceptable.
- Confirm fitting adequately an N95 mask beforehand.

\*E.g., Having had a conversation with the infected, or stayed in the same space for a long time wearing a mask

# (Ref) Basic idea of infection prevention measures in assisting living/physical nursing care

## Giving care to residents in general

Wear a **surgical mask**



## Giving care to COVID-19-positive patients, etc.

Wear an **N95 mask**

(Do the same when giving care to residents who cannot wear a mask)



When performing procedures that may cause exposure to droplets\*, wear an **eye protector**

\*See page 18 and 29

(Ref) Personal protective equipment when you may be exposed to droplets/aerosol of COVID-19 positive patients



When you give the following cares, wear an **N95 mask** and **eye protector**



Assisting eating



Sucking



Oral care



Seeing persons who loudly speak without a mask

Do the same in cares other than the above if you are exposed to droplets/aerosol

## 5 | Others

# Points to be noted about mass outbreak (cluster)

Coexistence with the virus is becoming reality. It is very difficult to prevent developing into cluster infections.



To prevent large scale clusters, taking basic anti-infection measures and early detection of virus carriers are important.



At a medical institution or welfare facility, a system has to be established to quickly test patients, users or staff who develop symptoms such as a fever.



If there is infected persons whose infection route is unknown, testing over a wide range should be considered, including patients, users and staff who had a contact with the infected person.



To grasp the infection situation, you should be tested if you had a contact with the infected person during two days before the onset, and two days before the sample taking when the infected has no symptom.



Those who have a high risk of infection, as well as those who are at relatively low risk, should wear an N95 mask until the cluster infection subsides. (Patients and users do not need to wear an N95 mask.)



## 6 | References

# “Effective and less burdensome” anti-infection measures for medical and nursing care workers

Proposed at the advisory board of the Ministry of Health, Labour and Welfare on June 8, 2022

“Effective and less burdensome” anti-infection measures for medical and nursing care workers

阿南、今村、岡部、太田、釜薙、高山、舘田、中島、前田、吉田、和田、脇田、尾身

## Four elements of anti-infection measures



When **ventilation** is provided properly, excessive measures can be avoided while preventing aerosol infection

### PPE in contacting with an infected person



**Keep wearing a surgical mask while working**

(Under a ventilated environment)

Performing procedures with higher infection risk and <b>contacting with patients in a room with inadequate ventilation</b>	<b>N95 mask</b>
Assisting having a meal, posture change, rehabilitation, etc.	<b>Wear gloves, a plastic gown and face shield</b>
No close contact, and low risk of being exposed to droplets of body fluid or excretion	<b>Plastic apron and gown unnecessary</b>
No close contact, but high risk of being exposed to droplets of body fluid or excretion	<b>Plastic apron or gown with sleeves</b>

### Zoning in the inpatient ward



**If the number of patients is small, zoning with exclusive ward is not necessary**

Zoning by room is adequate. (Inside of the room: red, door area in the room: yellow, outside of the door: green)

### Management of outpatients

**Treatment similar to that of influenza epidemic**

- ① Keep rooms well-ventilated
- ② Designate consultation time of the suspected patient
- ③ See the suspected patient first
- ④ Separate waiting areas



**The Ministry of Health, Labour and Welfare issued a notification on the same contents on June 2, 2022.**

## Infection route of the novel corona virus

The virus is carried in the particles, or aerosol, consisting of human saliva and mucus, and transmitted from human to human during conversation or other activities.



Int J Infect Dis. 2020 Nov;100:476-482.  
Clin Infect Dis. 2022 Mar 10;ciac202.  
Ann Intern Med. 2020 Sep 17;M20-5008.

The virus is also contained in droplets that are larger than aerosols. However, droplets travel only 20cm during conversation, and masks can prevent them from scattering. Infection risk is relatively low.



Nat Med. 2020 May;26(5):676-680.  
Building and Environment. Volume 176, June 2020.

Aerosols and droplets end up dropping onto the surrounding items such as floor and table. The contained virus dies in a relatively short time and the probability of infection through the surroundings is less than 1/10,000.



Emerg Infect Dis. 2020 Sep;26(9):2276-2278.  
J Occup Environ Hyg. 2020 Sep;17(9):408-415  
Environ Sci Technol Lett. 2021 Feb 9;8(2):168-175.

It is suggested that direct exposure to droplets and aerosols has higher risk of infection than contacts through the surrounding environment.



J Expo Sci Environ Epidemiol. 2022 Apr 27;1-8.

## Effectiveness of measures against COVID-19 1

Infection risks are reduced by wearing a mask.



Travel Med Infect Dis. Mar-Apr  
2020;34:101623.  
BMJ. 2021 Nov 17;375:e068302.

Masks' preventive effect is high in the following order.  
Fitted N95 mask→unfitted N95 mask→  
Double masking of wearing a fabric mask over an  
surgical mask→surgical mask→fabric or urethane mask



Science Advances 02 Sep 2020:Vol. 6, no. 36,  
eabd3083.  
mSphere. 2020 Oct 21;5(5):e00637-20.  
Am J Infect Control.  
doi.org/10.1016/j.ajic.2021.10.041.

Eye protection devices such as face shields are highly  
effective when worn on occasions when droplets may  
scatter.



Lancet. 2020 Jun 27;395(10242):1973-1987.  
J Occup Environ Hyg. 2014;11(8):509-18.

It is acceptable to wear an N95 mask for five  
consecutive work days.



Am J Infect Control. 2012 May;40(4):375-80.

## Effectiveness of measures against COVID-19 2

Effectiveness of wearing gloves double is not confirmed. Possibility of spreading infections by wearing gloves is suggested.



Clin Infect Dis. 2021 Nov 15; ciab953.  
J Infect Public Health. 2021 Sep;14(9):1226-1232.

Virus is rarely detected on the sleeves of gowns worn when giving care to patients that requires close bodily contacts, but not detected from chest and arm parts.



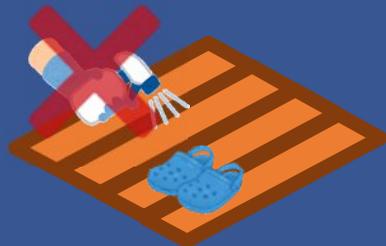
J Hosp Infect. 2021 Jan;107:111-113.  
Infect Control Hosp Epidemiol. 2020 May;41(5):614-616.

Hand hygiene (washing and disinfection) reduces infection risk by about 50%.



1BMJ. 2021 Nov 17;375:e068302.

Preventive effect of disinfecting the surrounding environment is low.



Am J Infect Control. 2021 Jun;49(6):846-848.  
Nat Hum Behav. 2020 Dec;4(12):1303-1312.

In a room where ventilation is difficult, use of high-performance air filtration apparatus or air purifying machine is effective.



Indoor Air. 2022 Apr;32(4):e13029.  
Clin Infect Dis. 2021 Oct 30;ciab933.  
J Hosp Infect. 2022 Jan;119:163-169.

Effectiveness of keeping physical distance is about 25%.



BMJ. 2021 Nov 17;375:e068302

# Evidence 4: Time for SARS-CoV-2 to reach an infectious dose

		Medical worker				
P a t i e n t	Assumed distance: <b>2m</b> or less					
	Rate of leakage (%)	No mask 100%	Fabric mask 75%	Non-woven fabric mask 50%	N95 mask fit 10%	N95 mask fit 1%
	 No mask 100%	<b>15min.</b>	<b>20min.</b>	<b>30min.</b>	<b>2.5hrs</b>	<b>25hrs</b>
	 Fabric mask 75%	<b>20min.</b>	<b>26min.</b>	<b>40min.</b>	<b>3.3hrs</b>	<b>33hrs</b>
	 Non-woven fabric mask 50%	<b>30min.</b>	<b>40min.</b>	<b>1hr</b>	<b>5hrs</b>	<b>50hrs</b>
	 N95 mask fit 10%	<b>2.5hrs</b>	<b>3.3hrs</b>	<b>5hrs</b>	<b>25hrs</b>	<b>125hrs</b>
 N95 mask fit 1%	<b>25hrs</b>	<b>33hrs</b>	<b>50hrs</b>	<b>125hrs</b>	<b>250hrs</b>	

Note: In case of highly contagious variant such as Omicron, contact time should be kept shorter than this table.

(Japanese syllabary order)

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