

# Coronavirus Disease 2019 Response Guidelines (For Local Governments)

## Appendix

Edition 7-3

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The Central Disease Control Headquarters  
The Central Disaster Management Headquarters

The Korea Centers for Disease Control and Prevention

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## Appendix 1. Main Contents of Legal Basis for COVID-19 Response

### □ Infectious Disease Control and Prevention Act of the Republic of Korea

Category	Article	Main contents
Epidemiological investigation	18	<p>① Where the Director of the Korea Centers for Disease Control and Prevention, a governor of a municipality, or the head of a city/county/district deems an infectious disease outbreak is either likely or that it is necessary to investigate the cause of disease onset, despite lack of clarity on the infectiousness of the disease, they shall, without delay, conduct an epidemiological investigation</p> <ul style="list-style-type: none"> <li>- The findings of the investigation shall be provided to the relevant health facilities (if necessary for preventing the spread of the infectious disease to other areas, such information shall be provided to other health facilities)</li> </ul> <p>② The Director of the Korea Centers for Disease Control and Prevention, a governor of a municipality, or the head of a city/county/district respectively establishes an epidemiological investigation team to conduct an epidemiological investigation</p> <p>③ <b>No one is permitted to (a) refuse, interfere with, evade the epidemiological investigation without justifiable ground (b) make a false statement or present false materials (c) intentionally omit or conceal any facts</b></p> <ul style="list-style-type: none"> <li>❖ (Article 79) Violation may result in up to 2 years in prison or a fine of up to 20 million won</li> </ul>
	18-4	<ul style="list-style-type: none"> <li>○ The Minister of Health and Welfare may require the head of a relevant central administrative agency, an institution or organization, etc. to present materials and the human resources necessary for epidemiological investigations</li> </ul>
	35-2	<ul style="list-style-type: none"> <li>○ Following the issue of an advance notice or alert with a warning level higher than “caution”, <b>no one is permitted to make a false statement, intentionally omit or conceal any facts, etc. to medical personnel regarding visits to healthcare facilities and diagnoses/treatments, etc.</b></li> <li>❖ (Article 83) Violation may result in a fine of up to 10 million won</li> </ul>
Management of patients and close contacts	37	<p>① If a large number of cases occur, or the designated infectious disease control institutions are insufficient to accommodate all patients, the Minister of Health and Welfare, a governor of a municipality, or the head of a city/county/district may take measures to operate isolation wards or clinics with accommodations and basic medical facilities, in accordance with the Enforcement Regulations of Infectious Disease Control and Prevention Act Article 31</p>
	41	<p>① Patients and others with an infectious disease with a particularly high risk of transmission, either belonging to a <b>Class 1 infectious disease and/or which has been publicly announced by the Minister of Health and Welfare, must receive inpatient treatment at an infectious disease control institution</b></p> <p>② If the infectious disease control institution is unable to accommodate patients and others with an infectious disease, the Minister of Health and Welfare, a governor of a municipality, or the head of a city/county/district may permit such patients and others to</p>

		<p>receive inpatient treatment at medical institutions other than infectious disease control institutions</p> <p>③ <b>The Minister of Health and Welfare, a governor of a municipality, or the head of a city/county/district may allow treatment at home or at an infectious disease control institution for a person with risk of infection or transmission of an infectious disease through contact with patients and others</b></p> <p>❖ (Article 80) Violation may result in a fine of up to 3 million won</p>
	42	<p>○ The Minister of Health and Welfare, a governor of a municipality, or the head of a city/county/district may enter a residence or any means of transportation, such as a ship, aircraft, train, etc., in which a patient or others with an infectious disease are deemed present, to conduct a search and/or medical treatment</p> <p>(If the individual in question is confirmed as a patient or other with an infectious disease, the person may receive treatment/be hospitalized)</p>
	43	<p>○ If a patient or others with an infectious disease requires inpatient treatment pursuant to Article 41, the Minister of Health and Welfare, a governor of a municipality, or the head of a city/county/district must notify the persons subject to inpatient treatment, as well as their guardian(s)</p>
	46	<p>○ The Minister of Health and Welfare, a governor of a municipality, or the head of a city/county/district may take measures such as requiring family members or cohabitants of a patient and others with an infectious disease, residents of the affected area, and/or persons who have been in close contact with a patient and others with an infectious disease, to undergo a medical examination, or to receive a vaccination</p>
On-site management	47	<p>○ In case of widespread occurrence of an infectious disease, the Minister of Health and Welfare, a governor of a municipality, or the head of a city/county/district shall implement the following measures as necessary:</p> <p>❖ (Article 80) Violation may result in a fine of up to 3 million won</p> <ol style="list-style-type: none"> <li>1. Temporary closure of; prohibition of entry of the general public to; restriction of movements within, to and from places where patients and others with an infectious disease are present or places deemed contaminated by the pathogen of an infectious disease</li> <li>2. Suspension of operation in a healthcare facility</li> <li>3. Hospitalization or quarantine of persons suspected of being infected, for a defined time period</li> <li>4. Prohibition of the use, receipt, transport, etc. or disposal of (suspected) contaminated objects</li> <li>5. Order to disinfect, etc. contaminated places</li> <li>6. Prohibition of washing/laundry and restriction of waste disposal in specified places</li> </ol>
On-site command	60	<p>① The Minister of Health and Welfare or a governor of a municipality may <b>appoint epidemic control officer(s) from among its public officials. The epidemic control officer exercises authority in taking measures on the site of the infectious disease</b> (e.g. restriction of movement, evacuation of residents, disposal of objects through which an infectious disease is transmitted, assignment of tasks for personnel in charge of infectious disease control, and the deployment of supplies for epidemic control)</p> <p>② Within the jurisdiction where an infectious disease outbreak occurred, police, fire, health departments and relevant public officials, corporations, organizations, and individuals must</p>

		<p>cooperate with measures taken by the epidemic control officer unless there is justifiable ground not to do so</p> <p>❖ (Article 79) Violation may result in up to 2 years in prison or a fine of up to 20 million won</p>
	60-2	<p>① <b>An epidemiological investigator may take temporary measures to close, prohibit entry of the general public, restrict movements and block traffic</b>, if the spread of an infectious disease is anticipated and is likely to cause serious harm to public health in the absence of immediate measures</p> <p>② Relevant public officials (such as police, fire, health department officials) in the jurisdiction where an infectious disease outbreak occurred must cooperate with the above measures unless there is justifiable ground not to do so</p>
Provision of information	76-2	<p>① The Minister of Health and Welfare or the Director of the Korea Centers for Disease Control and Prevention may, if necessary to prevent infectious disease and block the spread of infection, request the heads of relevant central administrative agencies, local governments, public institutions, healthcare facilities, pharmacies, corporations, organizations, and individuals to provide information regarding patients and others with the infectious disease and persons likely to be infected</p> <p>- Personal information such as Resident Registration Number, records of medical treatment, etc., immigration records, and other information prescribed by Presidential Decree for identifying paths of movement</p> <p>② The Minister of Health and Welfare may, if necessary to prevent infectious disease and block the spread of infection, request the head of the relevant police agency/station to provide location information of patients and others with the infectious disease and persons likely to be infected</p> <p>③ The Minister of Health and Welfare may provide collected information to the heads of the relevant central administrative agencies, etc.</p>
Funerary methods	20-2	<p>① In case of death of a patient and others with infectious disease (including a person confirmed after death to have contained pathogens of an infectious disease), funerary methods may be restricted within necessary limits for preventing the spread of infectious disease</p> <p>② The Minister of Health and Welfare may request cooperation from managers of crematory facilities; the recipient of such a request shall fully cooperate</p>
Employers' obligation to cooperate	41-2	<p>① If an employee is hospitalized or quarantined/isolated, the employer may grant paid leave (if the cost of paid leave is subsidized by the State, the employer is obligated to provide paid leave)</p> <p>② No employer shall dismiss, or otherwise unfavorably treat, an employee because of paid leave</p> <p>- Not applicable when the employer is unable to continue business during the period of the paid leave</p>
Compulsory measures regarding infectious disease	42	<p>① A relevant public official may enter a residence, means of transportation, such as a ship, aircraft, or train, etc., in which a patient or others with an infectious disease is deemed present, in order to conduct an investigation and/or medical examination; if the individual in question is confirmed to be infected, the public official may escort the individual to undergo medical treatment or be hospitalized</p> <p>② If the individual refuses the above investigation or medical examination, the relevant public official, who must carry identification indicating his/her authority and produce it to</p>

		<p>related persons, shall escort said individual to an infectious disease control institution to undergo necessary investigation or medical examination (If necessary, may request cooperation from head of the jurisdictional police agency, who is obligated to cooperate unless there is justifiable ground not to do so)</p> <p>③ An individual refusing investigation may be quarantined at home or in an infectious disease control institution</p> <ul style="list-style-type: none"> <li>- If said individual is confirmed to be a patient with infectious disease, he/she shall undergo medical treatment or be hospitalized in an infectious disease control institution, in accordance with ② (The patient's guardian(s) must be notified of the treatment/hospitalization)</li> <li>- If said individual is confirmed not to be a patient with infectious disease, he/she shall be immediately released from quarantine (If quarantine release is not possible in the absence of justifiable grounds, a claim may be made seeking release)</li> </ul>
Temporary duty orders	60-3	<p>① The Minister of Health and Welfare or a governor of a municipality may, if an infectious disease outbreak is likely or is already occurring, order medical personnel to perform infection control duties for a defined period of time at healthcare facilities designated as infectious disease control institutions, infectious diseases specialty hospitals, or infectious diseases research hospitals</p> <p>② The Minister of Health and Welfare may, in the case of an emergency outbreak of infectious disease, appoint medical personnel, pharmacists, veterinarians, and other experts in infectious disease or epidemiology as epidemic control officers for a defined period of time to perform infection control duties</p>
Compensation for losses	70	<p>① The Minister of Health and Welfare, a governor of a municipality, or the head of a city/county/district shall provide compensations to a person suffering from losses, in accordance with the deliberations and decisions of the Compensation Deliberation Committee</p>
Financial support for medical professionals and owners of healthcare facilities	70-3	<p>① The Minister of Health and Welfare, a governor of a municipality, or the head of a city/county/district may offer financial support (e.g. allowances, travel expenses, etc.) to medical personnel or owners of healthcare facilities that supported the surveillance, prevention, control, or epidemiological investigation of an infectious disease</p>
Livelihood assistance for patients and others with infectious disease	70-4	<p>① The Minister of Health and Welfare, a governor of a municipality, or the head of a city/county/district may provide financial assistance to hospitalized or isolated persons, including for treatment costs and livelihood assistance</p> <p>② If a gap in childcare occurs due to hospitalization or quarantine/isolation, necessary measures, such as childcare support, shall be taken</p>

## Appendix 2. Role Classification - Department Overseeing Home-Quarantined Persons and Department of Public Health (02/16/2020)

- ❖ Refer to “Letter of request for cooperation regarding COVID-19 home quarantine management” (Central Disaster Management Headquarters (Public Document 02/21/2020)) and operate flexibly according to each local government’s circumstances

Intention is to **clearly distinguish the roles of the department of public health and the department overseeing home-quarantined persons, in order to avoid confusion** following the transfer of tasks related to home quarantine management of COVID-19 close contacts

### □ Classification Criteria

- Department overseeing home-quarantined persons: Assign one dedicated official to each home-quarantined person; undertake general management including monitoring
- Department of public health: Implement legal affairs; designate and release quarantine; provide technical support in the area of public health

### □ Roles and Responsibilities

Division	Roles and responsibilities
<b>Department overseeing home-quarantined persons</b>	<ul style="list-style-type: none"> <li>▸ Assign one dedicated official to each home-quarantined person</li> <li>▸ Monitor at least twice a day following the monitoring guideline</li> <li>▸ In case of an unusual event, conduct a visit with public health staff and manage the situation*               <ul style="list-style-type: none"> <li>* For symptomatic cases: conduct epidemiological investigation</li> <li>For suspected cases: transfer to hospital isolation and examine</li> </ul> </li> <li>▸ Fully support the following based on local context: prescription/delivery of medicine, purchase/delivery of essential supplies, etc.</li> <li>▸ Cooperate with public health staff and the police if the quarantined person cannot be reached or is absent without leave*               <ul style="list-style-type: none"> <li>* Follow “guideline for close contact management” for detailed procedures</li> </ul> </li> </ul>
<b>Department of public health</b>	<ul style="list-style-type: none"> <li>▸ Establish contact tracing measures (e.g. private and emergency resources, quarantine/isolation facilities) for each municipality</li> <li>▸ Monitor the Integrated Health &amp; Disease Management System and enter quarantine management results</li> <li>▸ Manage home-quarantined persons, including assisting with initial visits and guidance               <ul style="list-style-type: none"> <li>- Guidance: Information regarding home-quarantine subjects, duration, and tips</li> </ul> </li> <li>▸ Support the usage of health facilities for symptoms not unique to COVID-19, e.g. fever, respiratory symptoms               <ul style="list-style-type: none"> <li>❖ Refer to COVID-19 Response Guidelines (Edition 7-2)* and others for matters not specifically addressed</li> </ul> </li> </ul>

	<i>*Translators' note: Edition 7-2 has been updated since this Appendix was published. Refer to the latest available edition through KCDC.</i>
<p>► <b>If the quarantine subject refuses quarantine or attempts unauthorized leave</b></p> <ul style="list-style-type: none"><li>- <b>Step 1) Encourage voluntary return</b> as much as possible, through means of persuasion and guidance on fines (<b>Department overseeing home-quarantined persons</b>)</li><li>- <b>Step 2) Report the case or take quarantine action</b> if the subject refuses instructions to return (e.g. deliberate attempts to leave) (<b>Department of public health</b>)</li></ul>	



## Appendix 3. Guidelines for Home-Quarantined Persons

These guidelines are for those in home quarantine to facilitate early identification and minimize community spread of COVID-19.

### GUIDELINES FOR HOME QUARANTINE

- ☐ **Outdoor activities are prohibited to prevent further spread of infection**
  - ☐ **Stay alone in an isolated space**
    - Close your room door and ventilate the space often by opening your window, and dine alone
    - If possible, use your own bathroom and sink
      - ❖ If you are using a communal bathroom or sink, clean the area with a household disinfectant after use
  - ☐ **If you must go outside (e.g. for treatment), report to your public health center**
  - ☐ **Do not talk to or come into physical contact with family or those you co-reside with**
    - If contact is unavoidable, do not face one another; always wear a mask and maintain a distance of at least 2 meters
  - ☐ **Use your own supplies/equipment (towel, dining utensils, phone, etc.)**
    - Wash clothes and bed sets separately
    - Use separate utensils from others and wash thoroughly before others' use
  - ☐ **Maintain other health guidelines**
    - Wash or sanitize hands frequently and maintain strict personal hygiene
    - If you have a cough, wear a mask
    - If you do not have a mask, practice cough etiquette (coughing into your arm) and wash hands after coughing
- During the active monitoring period, the public health center in charge will contact you to monitor symptoms. **Until 14 days have passed from your last contact with a confirmed patient**, please monitor for fever and possible symptoms.
- ☐ **How do I self-monitor?**
    - Every morning and evening, measure your body temperature and monitor for any respiratory symptoms
    - Contact your public health center at least once a day, and report any symptoms
  - ☐ **What symptoms should I look out for?**
    - Fever (greater than 37.5 °C), respiratory symptoms (e.g., cough, shortness of breath), and symptoms of pneumonia
- **IF YOU NOTICE SYMPTOMS DEVELOP OR WORSEN, PLEASE CONTACT THE PUBLIC HEALTH CENTER OR CALL 1339.**
- ❖ Designated Public Health Center: \_\_\_\_\_ Person in Charge: \_\_\_\_\_ Emergency Contact: \_\_\_\_\_

## Appendix 4. Guidelines for Family Members and Cohabitants of Home-Quarantined Persons

These guidelines are for family members and those living with home-quarantined persons, to facilitate early identification and minimize community spread of COVID-19.

### GUIDELINES

- ☐ **Minimize physical contact with those who have been home-quarantined**
  - Especially prohibit contact between home-quarantined persons and the elderly, pregnant women, children, those with chronic health conditions, cancer patients, and the immunocompromised
  - Minimize outside visitors
- ☐ **If you must be in contact** with the home-quarantined person, **wear a mask** and maintain a distance of at least 2 meters
- ☐ **Stay in a separate space from the home-quarantined person, and ventilate the communal space frequently**
- ☐ **Wash hands often using soap and water, or other detergent**
- ☐ **Separate your everyday household items (such as dining sets, cups, towels, and/or bed sets) from those of the home-quarantined person**
  - Wash the clothes and bed sets of the home-quarantined person separately
  - Use separate utensils and wash them thoroughly before letting others use them
- ☐ **Clean frequently touched surfaces:** e.g. tables, door knobs, bathroom surfaces, keyboards, and bedside tables
- ☐ **Closely monitor symptoms of the home-quarantined person**

➤ **IF YOU NOTICE SYMPTOMS OF THE HOME-QUARANTINED PERSON DEVELOP OR WORSEN, PLEASE CONTACT THE PUBLIC HEALTH CENTER OR CALL 1339.**

❖ Designated Public Health Center: \_\_\_\_\_ Person in Charge: \_\_\_\_\_ Emergency Contact: \_\_\_\_\_

\* **Coronavirus Disease 2019 (COVID-19) symptoms: fever (above 37.5 °C), respiratory symptoms (e.g. cough, shortness of breath), pneumonia**

## Appendix 5. Guidelines for Home-Isolated Patients

This guideline is provided to those who are home-isolated for “at-home treatment” to prevent further community spread of COVID-19.

GUIDELINES
<ul style="list-style-type: none"> <li><input type="radio"/> <b>Outdoor activities are prohibited to prevent further spread of infection</b></li> <li><input type="radio"/> <b>Stay alone in an isolated space</b> <ul style="list-style-type: none"> <li>– Close your room door and ventilate the space often by opening windows, and dine alone</li> <li>– If possible, use your own bathroom and sink               <ul style="list-style-type: none"> <li>❖ If you are using a communal bathroom or sink, clean the area with a household disinfectant after use</li> </ul> </li> </ul> </li> <li><input type="radio"/> <b>If you must go outside (e.g. for treatment), report to your public health center</b></li> <li><input type="radio"/> <b>Do not talk to or come into physical contact with family or those you co-reside with</b> <ul style="list-style-type: none"> <li>– If contact is unavoidable, do not face one another; always wear a mask and maintain a distance of at least 2 meters</li> </ul> </li> <li><input type="radio"/> <b>Use your own supplies/equipment (towel, dining utensils, phone)</b> <ul style="list-style-type: none"> <li>– Wash clothes and bed sets separately</li> <li>– Use separate utensils from others and wash thoroughly before others' use</li> </ul> </li> <li><input type="radio"/> <b>Maintain other health guidelines</b> <ul style="list-style-type: none"> <li>– Wash or sanitize hands frequently and maintain strict personal hygiene</li> <li>– If you have a cough, wear a mask</li> <li>– If you do not have a mask, practice cough etiquette (coughing into arm) and wash hands after coughing</li> </ul> </li> </ul>
<ul style="list-style-type: none"> <li>▪ During the active monitoring period, the public health center in charge will contact you to monitor symptoms. <b>Until 14 days have passed from your last contact with a confirmed patient</b>, please monitor for fever and possible symptoms.</li> <li><input type="radio"/> <b>How do I self-monitor?</b> <ul style="list-style-type: none"> <li>– Every morning and evening, measure your body temperature and monitor for any respiratory symptoms</li> <li>– Contact your public health center at least once a day, and report any symptoms</li> </ul> </li> <li><input type="radio"/> <b>What symptoms should I look out for?</b> <ul style="list-style-type: none"> <li>– Fever (greater than 37.5 °C), respiratory symptoms (e.g., cough, shortness of breath), and symptoms of pneumonia.</li> </ul> </li> </ul>
<p>➤ <b>IF YOU NOTICE SYMPTOMS DEVELOP OR WORSEN, PLEASE CONTACT THE PUBLIC HEALTH CENTER OR CALL 1339.</b></p> <p>❖ Designated Public Health Center: _____ Person in Charge: _____ Emergency Contact: _____</p>

## Appendix 6. COVID-19 Code of Conduct

### General:

1. **Thoroughly wash hands with soap and running water**
2. **Cover mouth and nose with sleeve when coughing or sneezing**
3. **Do not touch your ear, nose, or mouth without washing hands**
4. **When visiting a healthcare facility, wear a mask**
5. **Avoid crowded places**
6. **Minimize contact with those who have fever or respiratory symptoms (e.g. cough, shortness of breath)**

**High-risk group:** If you are pregnant, 65 or older, and/or have a chronic health condition (e.g. diabetes mellitus, heart failure, chronic pulmonary diseases such as asthma or COPD, kidney failure, cancer, etc.),

1. **Avoid crowded places**
2. If you must go outside or visit a healthcare facility, **wear a mask**

**Those with symptoms:** If you have a fever or respiratory symptoms,

1. **Do not go to school or work, and avoid outdoor activities**
2. **Get plenty of rest at home and closely monitor for symptoms for 3-4 days**
3. **If you have a fever above 38 °C or worsening symptoms**, either A) call 1339 or your local public health center or B) visit a COVID-19 screening clinic for evaluation
4. When visiting a healthcare facility, **use your own car and wear a mask**
5. Disclose your **travel history** and **past contacts with people with respiratory symptoms** to the healthcare provider

### **Domestic COVID-19 hotspots:**

1. Minimize outdoor activities and travels to other areas
2. Those in home quarantine: Please follow the protocol and guidance by medical personnel and epidemic control office

**How to wear a medical-grade mask:**

1. Before putting on a mask, **wash hands thoroughly with soap and running water**
2. Cover your nose and mouth completely; there should be a complete seal around the face
3. **Do not place any additional materials** such as towel or tissue in the mask
4. **While wearing the mask, do not touch the mask**
  - If you touch the mask, wash hands thoroughly with soap and water
5. To remove the mask, only touch the ear loops/ties; afterwards, **wash hands thoroughly with soap and running water**

**How to wear a foldable mask:**

01  
Open the wings of the mask and fold the edges inwards



02  
The tightening part should face upwards and completely cover the nose and lips



03  
Wrap the straps behind the ears and secure it in place



04  
Use both hands to mold the mask to fit the nose



05  
Check for air leakage while compressing the mask towards the face

**How to wear a cup-shaped mask:**

01  
Drop both straps down and hold the mask lightly



02  
Fit the mask on the face making sure the nose and chin is completely covered



03  
Use one hand to hold the mask in place while the other hand secures the upper straps behind the ear



04  
Secure the lower straps behind the neck through the loop




05  
Use both hands to mold the mask to fit the nose




06  
Check for air leakage while compressing the mask towards the face

(Source: The Ministry of Food and Drug Safety. Proper use of medical-grade masks)

## Preventive Rules for Infectious Diseases: Handwashing and Coughing Etiquette




질병관리본부  
KCDC




1339  
질병관리본부 콜센터

**WASH THOROUGHLY  
WITH SOAP FOR AT  
LEAST 30 SECONDS**


**Proper Handwashing: 6 Steps**




1 palms




2 back of hands




3 between fingers




4 hands joined




5 thumbs



6 under nails




**PROPER HANDWASHING & COUGH ETIQUETTE  
CAN PREVENT THE TRANSMISSION OF  
NUMEROUS INFECTIOUS DISEASES**




**When you cough,  
cover mouth & nose  
with sleeve!**


**Proper Cough Etiquette**



1 carry tissues/  
handkerchiefs



2 cover cough  
with sleeve



3 wash hands  
after coughing

Released 2019.11.5.

## Appendix 7. Patient Severity Classification and Hospital Bed Assignment Protocol

Can be modified depending on available assessment modalities

### ☐ Patient Severity

- Example 1: The Korean Medical Association protocol for severity classification

\* If a patient is from a long-term nursing or care facility, escalate by one level

\* If 48 hours have passed since the improvement of symptoms included in the criteria below, the severity class can be lowered by one level

Classification	Criteria
<b>Asymptomatic</b>	Meets all conditions below: ① Alert mental status ② Under 50 years of age ③ No underlying health conditions ④ Body temperature lower than 37.5 °C <b>without</b> antipyretics ⑤ Non-smoker
<b>Mild</b>	Alert mental status and one or more conditions below: ① Under 50 years of age ② No underlying health conditions ③ Body temperature 38 °C or lower <b>with</b> antipyretics ④ One or more symptoms* other than shortness of breath ⑤ Smoker
<b>Moderate</b>	Alert mental status and one or more conditions below: ① Body temperature 38 °C or higher <b>with</b> antipyretics ② Shortness of breath or radiological signs of pneumonia
<b>Severe</b>	① Altered mental status ② Severe shortness of breath ③ Oxygen saturation ≤90% ④ Radiological findings of severe bilateral pneumonia or ≥50% pneumonia

\* Symptoms: Headache, cough, sore throat, phlegm, fatigue, myalgia, shortness of breath

❖ Reference: Expert committee for COVID-19 countermeasures headquarters at the Korean Medical Association (03/05/2020)

- Example 2: Modified Early Warning Score (MEWS)

Variable	3	2	1	0	1	2	3
<b>Pulse</b> (/minute)		≤40	41-50	51-100	101-110	111-130	≥131
<b>Systolic blood pressure</b> (mmHg)	≤70	71-80	81-100	101-199		≥200	
<b>Respiratory rate</b> (/minute)		≤8		9-14	15-20	21-29	≥30

<b>Body temperature (°C)</b>		≤35.0	35.1-36.0	36.1-37.4	≥37.5		
<b>Mental status</b>				Normal	Responds to voice	Responds to pain	Unresponsive

\* Early warning score: Criteria to determine if a patient is at emergency status

- Protocol per severity classification

Score	Risk level	Monitoring frequency	Management
0~4	Mild (low risk)	6~12 hours	Symptomatic treatment and symptom monitoring
5~6	Moderate (moderate risk)	1~2 hours	Symptomatic treatment and symptom monitoring
≥7	Severe (high risk)	Continuous	Mechanical ventilation etc. necessary
≥7	Critical (high risk)	Continuous	<ul style="list-style-type: none"> <li>• CRRT, ECMO necessary</li> <li>• Patients with end-stage conditions, such as irreversible brain damage, multi-organ failure, end-stage chronic hepatic or pulmonary diseases, or metastatic cancer</li> </ul>

- Example 3: British National Early Warning Score: NEWS

Variable	3	2	1	0	1	2	3
<b>Oxygen saturation (%)</b>	≤91	92-93	94-95	≥96			
<b>Need for supplemental oxygen</b>	Yes	Yes	No	No			
<b>Heart rate (/minute)</b>	≤40		41-50	51-90	91-110	111-130	≥131
<b>Systolic blood pressure (mmHg)</b>	≤90	91-100	101-110	111 - 219			≥220
<b>Respiratory rate (/minute)</b>	≤8		9-11	12 - 20		21-24	≥25
<b>Body temperature (°C)</b>	≤35.0		35.1-36.0	36.1-38.0	38.1-39.0	≥39.1	
<b>Mental status</b>				Normal			Abnormal

- Scores of 5 or more are moderate, 7 or more are severe



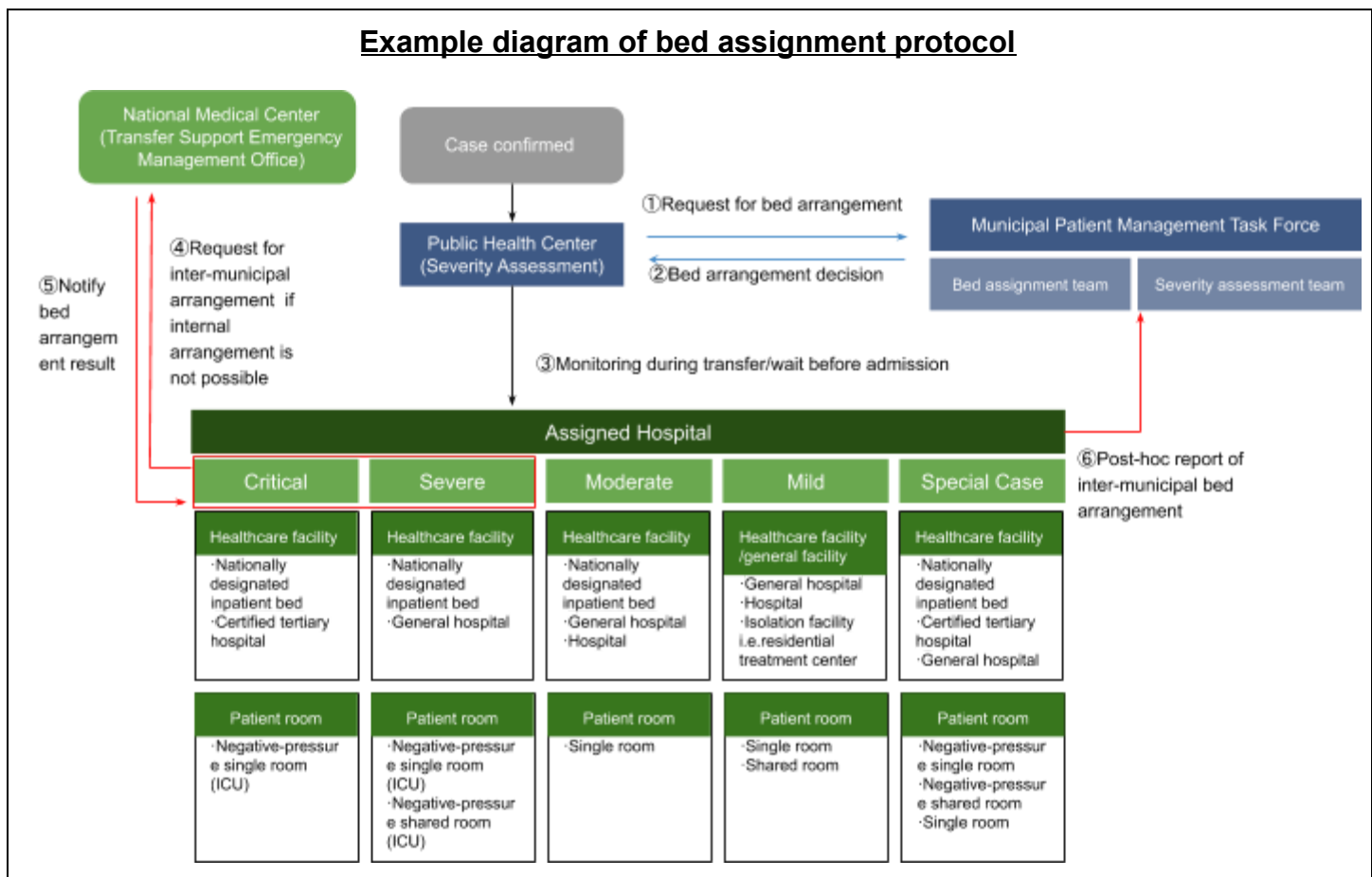
- ❖ Reference for Examples 2 and 3: Guidelines for COVID-19 Response for Severe Cases (03/02/2020) by the Korean Society of Critical Care Medicine, the Korean Society of Tuberculosis and Respiratory Diseases, the Korean Society of Infectious Diseases, and the Korean Society for Antimicrobial Therapy

- Patients in high-risk groups will be considered severe and will be assigned to inpatient beds accordingly

### ❖ High-risk groups

- **Age:** 65 or older
- **Chronic underlying health conditions:** Patients with diabetes mellitus; chronic renal, hepatic, pulmonary, and/or cardiovascular diseases; patients with hematologic malignancies; any cancer patients undergoing chemotherapy; patients taking immunosuppressants; HIV/AIDS patients
- **Special situations:** Patients with morbid obesity, pregnancy, end-stage-renal-disease undergoing dialysis, and/or organ transplant history
- **Inpatients:** Patients with oxygen saturation below 90% on room air requiring initial supplemental oxygen therapy

### □ Example of Bed Assignment Protocol



\* Special wards: Dialysis patients (dialysis ward), pregnant women (delivery room), transplant recipients (sterile unit)

## □ Bed Assignment Protocol

This action plan should be applied on the front lines of healthcare under the “red alert” of the COVID-19 crisis alert level and is intended to be applied temporarily.

- COVID-19 is currently known to spread primarily through **droplets and contact**
  - However, during medical procedures including intubation and bronchoscopy, aerosol transmission is possible.
- To prevent circulation of air from a confirmed patient's room throughout the hospital, as a general rule, use a **negative-pressure single room**
  - If no negative pressure room is available, **minimize air circulation from the confirmed patient's room into the hospital building**
    - ❖ Ventilation system standard: Under typical circumstances, outside air (30%) and indoor air (70%) are mixed and circulated. Under the current circumstance with COVID-19, adjust hospital ventilation system to use 100% of outside air, and **do not re-circulate indoor air**
  - **When a single room is not available**, a patient can be admitted to a **shared room for confirmed cases** in a ward that is completely separate from a regular patient ward or in an **isolation facility such as a residential treatment center**
- Admit suspected patients to a negative-pressure single room; if no negative-pressure single room is available, use a regular single room that meets the ventilation system standard
- Prioritize **high-risk patients** who require medical procedures when assigning negative-pressure beds

### Bed assignment protocol for confirmed cases

- 1) **Negative-pressure single room** must be used, as a general rule
  - 2) If 1) is not available, use **negative-pressure shared room**
  - 3) If 2) is not available, use **regular single room**
  - 4) If 3) is not available, use **regular shared room**
    - \* 3-meter distance between patient beds not mandatory
  - 5) If 4) is not available, use all rooms on an entire floor
  - 6) However, severely ill patients must be admitted to nationally-designated isolation beds in negative pressure single rooms
    - Distribute among negative pressure rooms in tertiary hospitals
- ❖ **Conditions for 3), 4), 5)**
- Movement: Separate patient movements completely between confirmed positive and regular patients; when a confirmed positive patient is admitted to a regular room, dedicate and independently operate entire patient ward (floor)
  - Ventilation system standard: Under typical circumstances, outside air (30%) and indoor air (70%) are mixed and circulated; therefore adjust the hospital ventilation system to use 100% of outside air, and do not re-circulate indoor air

## Appendix 8. Cohort Isolation Protocol

### ☐ Background

- Definition: **Isolation of patients who have been exposed to or infected by the same pathogen in a healthcare setting (e.g., in a shared patient room)**
- Cohort isolation is not typically recommended from an infection prevention and control point of view
  - Use cohort isolation when the number of patients requiring single-bed hospital rooms exceeds the number of available rooms
  - \* Always place a patient with an airborne infectious disease (e.g., tuberculosis, chickenpox, measles) in a single-bed, negative pressure room with a closed door and own bathroom
- In a cohort isolation setting, consider each bed area as a one-patient room (i.e. “wall-less” isolation area)
- Prevent and control the spread of infection through strict adherence to risk assessment, hand hygiene, Personal Protective Equipment (PPE) use, and environmental disinfection protocols

### **Cohort isolation guidelines for when single-room hospital isolation is not possible**

Pathogen	Isolation type	Isolation guidelines
Influenza* or viral illness	Contact and droplet	<ul style="list-style-type: none"> <li>- Single-bed patient room placement recommended</li> <li>- If single-bed rooming is not possible, isolate as a cohort with other patients infected by the same viral organism</li> <li>- Treat each bed area as a single patient room</li> </ul>
Unidentified respiratory virus causing acute respiratory disease (e.g., influenza-like illness [ILI], pneumonia)	Contact and droplet	<ul style="list-style-type: none"> <li>- Single-bed patient room placement recommended</li> <li>- If single-bed rooming is not possible until organism can be identified, isolate as a cohort with other patients with symptoms of ILI</li> <li>- Treat each bed area as a single patient room</li> </ul>

\*Patients grouped into a cohort should all be infected with the same pathogen. Patients who do not fit this criteria should not be in the room, and patients infected with multiple pathogens or infectious diseases should not be cohort-isolated at all.

### ☐ Cohort Patient Protocol

- Prevent and control the spread of infection through strict adherence to risk assessment, hand hygiene, PPE use, and environmental disinfection protocols
- Treat each patient bed area as a single patient room
- Practice hand hygiene procedures before caring for other patients in the same cohort isolation room
- Maintain at least 2 meters between each patient bed
- Put curtains or portable screens to maintain a temporary wall between patient beds so that they can be considered independent areas
- If possible, use separate treatment supplies and equipment for each patient

- If not, clean and disinfect each item before using on other patients
- Dispose of shared items that cannot be cleaned/disinfected
- o If an isolated patient transfers rooms or is discharged, clean the isolation area

## □ References

1. Alberta Health Services(Canada). Guidelines for Cohorting Isolation Patients in AHS Facilities. Feb 2019.
2. Health Services Scotland. Patient Placement, Isolation and Cohorting: Standard Infection Prevention & Control and Transmission Based Infection Control Precautions. Sep. 2018.

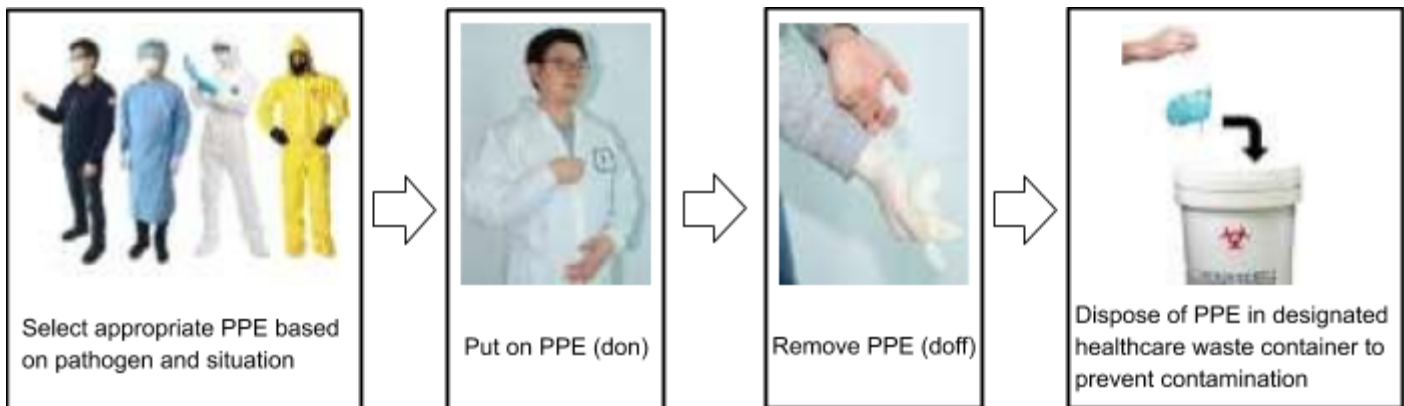
## Appendix 9. COVID-19-Related Use of PPE

### □ Scope of Application

- All procedures related to suspected and confirmed cases, as well as close contacts of confirmed cases of COVID-19
  - e.g. port-of-entry screening, transfer, epidemiological investigation, screening, patient evaluation, treatment, specimen collection or transfer, testing, surgery, handling of equipment, environmental management, and handling of human remains

### □ Key Contents

- Personal Protective Equipment (PPE) types, selection, donning and doffing, and proper disposal as healthcare waste



### □ Usage Rules:

- As a general rule, all equipment and devices should be used once and thrown away, except for non-disposable items
- Reusable/non-disposable equipment must be disinfected or sterilized as per manufacturer recommendations
- Practice infection control methods including standard precautions, contact precautions and droplet (including airborne) precautions
- For effective prevention of infection, prioritize appropriate selection and correct use of PPE
  - Put on PPE before coming into contact with source of infection (e.g. before contact with a patient, outside a quarantine/isolation room)
  - Follow guidelines for each item of PPE (especially the close fit of respiratory protection equipment)
  - Ensure that a contaminated PPE does not contaminate the surrounding environment
    - i. Avoid contact with surroundings other than with the patient while wearing PPE
    - ii. When removing PPE, avoid contaminating own body parts and surroundings
  - Remove PPE away from source of infection (e.g. locker room outside of the isolation room)








- Used PPE should be considered contaminated; dispose of PPE in the designated healthcare waste container to avoid contamination of surroundings
- As a general rule, all PPE should be used once and thrown away
- Dispose of damaged or contaminated PPE; do not use or store them
- Should reuse of PPE be unavoidable, only reuse after proper sterilization; limit reuse to PPE for which sterilization is possible
- Always practice strict personal and hand hygiene (hand-washing or sanitizing) after removing PPE; hands, body parts, and/or clothing can be contaminated unknowingly and without being visibly soiled
- Requirements for PPE



Protection target	PPE type	Required	PPE requirements/ applicable conditions
Respiratory system	Disposable KF94 or equivalent respiratory protection equipment	Yes	-
	PAPR (replacement for KF94 or equivalent respiratory protection equipment)	When necessary	When performing aerosol-generating procedures (replacement for KF94 or equivalent respiratory protection equipment)
Eye	Goggles (or other eye protection)	Yes	Anti-fogging & anti-scratch coating
Full body	Disposable full-body protective suit	Yes	Waterproof / maintain waterproofness for at least 2-3 hours; must be impermeable to blood or virus
	Disposable gloves	Yes	Must cover wrists; wear two sets
	Disposable shoe covers	Yes	Must cover ankles; made of non-slippery material
	Disposable medical apron/gown cover	When necessary	Must cover from torso to knees; e.g. during dialysis or CRRT

## □ Recommended PPE Types and Usage per Situation

- Choose PPE that can protect the whole body including the respiratory system, eyes, hands and feet, from the source of infection
  - Disposable waterproof long-sleeve gowns, disposable gloves, masks (N95 or KF94 equivalent), goggles or other eye protectors, boots or shoe-covers, etc.
- Important: Select and use the appropriate PPE based on type of disease, **transmission route, conditions of exposure to infection, and purpose**

○ PPE-specific characteristics and indications for use

Item	Hazard	Indications for use	Picture
Disposable gloves	Contact	<ul style="list-style-type: none"> <li>• Hand protection</li> <li>• Pick appropriate material given level of exposure</li> <li>• If allergic to powder, use powder-free or nitrile product</li> </ul>	
Disposable waterproof long-sleeved gown	Blood or bodily fluids splashing on body or clothes	Prevents further indirect spread of pathogens via viral droplets on body and clothes	
Full body protective suit (coveralls)	Blood or bodily fluids splashing on body or clothes	Prevents further indirect spread of pathogen via viral droplets on body and clothes	
Shoe covers			
Boots	Blood or bodily fluids splashing on shoes	Use instead of shoe covers: <ul style="list-style-type: none"> <li>• When floor is wet or extensively soiled</li> <li>• Choose based on exposure risk</li> </ul>	
Hair cap	Soiling of hair	Prevents droplets from contaminating hair	
Goggles	Blood or bodily fluids splashing onto ocular mucous membranes	<ul style="list-style-type: none"> <li>- Prevents infection of ocular mucous membranes</li> <li>- For reuse, clean with antiviral disinfectant</li> </ul>	
Face shield	Blood or bodily fluids splashing onto ocular mucous membranes	<ul style="list-style-type: none"> <li>- Prevents infection of ocular mucous membranes and face</li> <li>- Depending on exposure risk, can use instead of goggles</li> <li>- For reuse, clean with antiviral disinfectant</li> </ul>	

KF94 or equivalent (or higher-grade) respiratory protection equipment	Inhalation of droplets or aerosols	<ul style="list-style-type: none"> <li>- Prevents inhalation of pathogen particles via nasal or oral mucous membranes</li> <li>- Usage examples: <ul style="list-style-type: none"> <li>• When entering confirmed or suspected patients' quarantine/isolation room (including all healthcare workers and visitors)</li> <li>• During sputum induction</li> <li>• During aerosol-generating procedures</li> <li>• When transporting suspected or confirmed patients</li> </ul> </li> </ul>	
PAPR respiratory protection equipment	Inhalation of droplets or aerosols	<ul style="list-style-type: none"> <li>- Prevents inhalation of pathogen particles via nasal or oral mucous membranes</li> <li>- Requires thorough inspection and maintenance, including regular battery charge, filter exchange, and device disinfection</li> <li>- Check for damage and malfunction prior to use; ensure routine repair, exchange, or disposal</li> <li>- If reuse is unavoidable, disinfect prior to reuse and storage</li> </ul>	



○ COVID-19 PPE recommendation by situation

Situation	PPE						
	Respiratory protection			Body protection			Eye protection
	Surgical mask	KF94 or equivalent	Electronic respirator	Disposable gloves	Disposable waterproof long-sleeved gown	Coveralls (including shoe covers)	Goggle/ face shield
POE screening (epidemiological investigation)		●		●		●	●
Screening center administrative staff		●		●	●		
Screening center clinical staff		●		●	●		●
Transport (ambulance driver)		●		●			
Transport (quarantine officer, PHC personnel, EMT, etc.)		●		●		●	●
Ambulance disinfection		●		●		●	●
Suspected patient care: entering room, evaluating, and nursing		●		●	●		●
Aerosol-inducing procedures		●		●	●		●
Examination: X-ray and other imaging		●		●	●		●
Respiratory specimen collection		●		●	●		●
Specimen handling (laboratory, etc.)		●	●	●	●		●
Specimen transport (in intact package)				●			
Dead body transport		●		●		●	
Patient room cleaning and disinfection		●		●	●		●
Healthcare waste disposal and handling		●		●	●		●
Healthcare waste transport	●			●	●		

## □ PPE Standards for Healthcare Facilities

Setting	Activity	Recommended PPE standard	
		ICU patient	Emergency room patient
<b>High-risk patient area</b> 1. Screening Center at a healthcare facility or an emergency department 2. Respiratory disease outpatient clinic 3. Isolated patient room (ICU and emergency room)	1. Regular patient care 2. Aerosol generating procedures <sup>1,2</sup>	① PPE including: - Mask: KF94-equivalent or higher* - Goggles <sup>4</sup> - Disposable, waterproof long-sleeve gown - Disposable gloves - Hat (optional) OR ② Level D PPE	① PPE including: - Mask: KF94-equivalent or higher* - Goggles <sup>4</sup> - Disposable, waterproof long-sleeve gown - Disposable gloves - Hat (optional) OR ② Level D PPE
	No patient contact (e.g., outside patient room)	Surgical mask	Surgical mask
<b>General patient area</b>	Regular patient care	- Surgical mask - Standard precautions or transmission-based precautions	- Surgical mask - Standard precautions or transmission-based precautions
	Aerosol generating procedures <sup>1,3,5</sup>	① PPE including: - Mask: KF94-equivalent or higher* - Goggles <sup>4</sup> - Disposable, waterproof long-sleeve gown - Disposable gloves - Hat (optional) OR ② Level D PPE	① PPE including: - Mask: KF94-equivalent or higher* - Goggles <sup>4</sup> - Disposable, waterproof long-sleeve gown - Disposable gloves - Hat (optional) OR ② Level D PPE
	No patient contact	Surgical mask	Surgical mask
<b>Area without patients</b>	No patient contact	Surgical mask	Surgical mask

\* Including PAPR (Powered Air Purifying Respirator)

<sup>1</sup> Double glove while examining, treating, nursing, testing, or cleaning around suspected or confirmed positive patients to mitigate the risk of exposure from glove perforation.

<sup>2</sup> If driving an ambulance without a barrier separating the driver seat from the patient compartment, wear a full-body suit, shoe cover, KF94-equivalent respiratory protection equipment, and gloves and wear goggles/face shield if necessary.

<sup>3</sup> In specimen-handling labs or exam rooms, refer to guidelines from the KCDC Biological Safety Board for PPE choice, use, and maintenance.

## □ Donning and Doffing PPE

- How to don (put on) PPE
  - Prepare all equipment according to the PPE recommendations per healthcare setting and put on equipment in proper sequence and method
  - \* Tie hair back in a secure manner and remove watch/jewelry to prevent contamination
  - \* Drink fluids to prevent dehydration and use the bathroom before donning PPE
  - \* In cases of contamination or damage to PPE after putting on PPE, change PPE before next treatment or provision of care
  - \* Rotate shift if you have been working until your inner gloves become wet
- How to doff (take off) PPE
  - Remove PPE at a place safe from pathogens (e.g. changing room outside isolation room) and be careful not to contaminate body parts and surroundings
  - Take caution not to contaminate surroundings while removing PPE, and do so in the proper sequence and method; immediately discard them as healthcare waste

Category		Sequence for KF94 equivalent respiratory protection equipment and coveralls	Sequence for PAPR and coveralls
Donning order	1	Hand hygiene	Hand hygiene
	2	(Inner) Gloves	(Inner) Gloves
	3	Lower part of full body protective suit	Full body protective suit
	4	Shoe covers (or boots)	Shoe covers (or boots)
	5	KF94 equivalent respiratory protection equipment	Powered Air Purifying Respirator (PAPR) <sup>4</sup>
	6	Goggles (or face shield)	Hood
	7	Upper part of full body protective suit and tighten hood	Connect PAPR and hood
	8	(Outer) Gloves	(Outer) Gloves
(Remove PPE outside of infectious areas such as isolation rooms)			
Doffing <sup>5</sup> order	1	(Outer) Gloves	(Outer) Gloves
	2	Glove disinfection	Glove disinfection
	3	Full body protective suit	Powered Air Purifying Respirator (PAPR)
	4	Shoe covers (or boots)	Hood

<sup>4</sup> Follow manufacturer instructions for putting on and taking off PAPR and tubing since it can be different for each product.

<sup>5</sup> The inner glove can be contaminated while taking off the PPE. Therefore, it is advisable to sanitize the gloved hand after removing each element of the PPE.

	5	Glove disinfection	Full body protective suit
	6	Goggles (or face shield)	Shoe covers (or boots)
	7	KF94 equivalent respiratory protection equipment	(Inner) Gloves
	8	(Inner) Gloves	Hand hygiene
	9	Hand hygiene	-

Refer to KCDC website → Notice/Resources → Promotional material → Videos → Donning/doffing of Level D PPE

## Appendix 10. COVID-19 Funeral and Dead Body Management

Patients who expire from COVID-19 may be potentially infectious. **Standard precautions** must be applied in all circumstances. While handling bodies, **minimizes exposure**, as contact with blood, bodily fluids, or tissues of dead bodies of infected patients can be contagious.

### 1. Standard Recommendations

#### A. Personal Hygiene and Personal Protective Equipment (PPE)

- Educate all workers on infection prevention and practice strict personal hygiene.
- When handling dead bodies
  - Be cautious not to come in contact with blood or bodily fluids of dead bodies
  - **Wear PPE:** Use gloves, disposable long-sleeved gown or full-body protective suit, medical-grade mask, goggles or face protection
  - In case of a wound or an abrasion, use waterproof dressing or bandage
  - Do not smoke, eat, or drink while handling dead bodies
  - Practice strict personal hygiene: do not touch own face and maintain strict hand hygiene while handling dead bodies
  - Prevent needlestick injuries while handling dead bodies
- After handling dead bodies, safely remove PPE and wash hands
- **Appendix 9. COVID-19-Related Use of PPE**

#### B. Prevention of Exposure to Blood or Bodily Fluids

- If blood or bodily fluids of dead bodies come in contact with open skin or membrane, wash thoroughly with sufficient amount of water.
- Report the exposure incident to a supervisor; the exposed worker must be immediately examined for proper wound management and post-exposure care

#### C. Waste Management

- **Appendix 12. Special Protocol for Safe Management of COVID-19 Related Waste**

#### D. Laundry Management

- Handle all used linen with standard precautions.
- Used linen should be handled as little as possible with minimum agitation to prevent possible contamination of the person handling the linen and generation of aerosols due to potentially contaminated lint in the area.
- Linen contaminated with blood or body fluids should be washed in hot water(>70°C); otherwise, they should be soaked in freshly prepared 1:49 diluted household bleach for 30 minutes before washing

## 2. Environmental Management

### A. Dilution of Disinfectant

- All surfaces that may be contaminated should be wiped with a household bleach diluted 1:49, left to rest for 15-30 minutes, then rinsed with water
  - ❖ Dilution ratio: 100 mL 5.25% Sodium Hypochlorite : 4900 mL Water
- Metal surfaces can be wiped with 70% alcohol
- Surfaces visibly contaminated with blood or body fluids should be wiped with a household bleach diluted 1:4, left to rest for 10 minutes, then rinsed with water
  - ❖ Dilution ratio: 100 mL 5.25% Sodium Hypochlorite : 400 mL Water
- Sodium Hypochlorite solution must be newly diluted before each use

### B. Morgue

- Should be kept clean and properly ventilated at all times; must have adequate lighting and be regularly disinfected
- It is prohibited to smoke, drink, and eat in autopsy rooms, morgue units, and viewing rooms

## 3. Dead Body Management

### A. Hospital Wards

- Staff handling dead bodies must wear appropriate PPE
- Remove all tubes, drainage, catheters, *etc.* from the body
- Have extreme caution when removing intravenous catheters or other sharp objects, and dispose of them immediately into waste containers
- Disinfect wound drainage sites and needle puncture sites, and dress with impermeable material to prevent leakage of body fluids
- If necessary, remove oral and nasal secretions by gentle suction
- Plug oral, nasal, and rectal orifices to prevent leakage of body fluids
- Clean and dry all bodies
- The dead body must first be sealed in a 150 µm-thick leak-proof transparent plastic bag. Pins should never be used.
- The bagged body must be put into an opaque body bag, and the outside of the body bag must be wiped with diluted household bleach (Sodium Hypochlorite 1 : Water 4) and dried

### B. Autopsy Room

- Since every dead body in the autopsy room is a potential source of infection, autopsy physicians and other support staff should always follow the standard guidelines for isolation when performing an autopsy.
- Autopsy should not be performed unless necessary as it may expose employees to inadvertent risks, but the following principles should be followed to perform an autopsy:

- It should be performed by a pathologist using recommended techniques and procedures to reduce the risk of infection
- The number of people allowed in the autopsy room should be limited to those directly involved in the operation
- Disinfect the skin surface using 1:49 diluted household bleach. The dead body should be placed in a 150 µm-thick leak-proof transparent plastic bag, followed by placing into an opaque body bag and zipper-closed.
- The outside of the body bag must be wiped with 1:4 diluted household bleach and dried. Appropriate warning tag must be attached to the outside of the body bag.

## C. Morgue

- All dead bodies must be identified and correctly labeled with identification labels and category tags
- Dead bodies must be stored in cold chambers maintained at approximately 4°C
- ❖ References: Singapore Department of Health Hospital Authority Food and Environmental Hygiene Department. Precautions for Handling and Disposal of Dead Bodies. (Feb. 2020)

## Appendix 11. COVID-19 Testing Laboratories

- ❖ See changes on the Korea Centers for Disease Control and Prevention (KCDC) website ([www.cdc.gov.kr](http://www.cdc.gov.kr)) - alerts/documents - notices/announcements.

### **KCDC-designated laboratory: 12 Laboratories**

Number	Region	Laboratory	Address	Contact
1	Seoul	Samgwang Medical Foundation	41 Baumoe-ro 57-Gil, Seocho-gu, Seoul	02-3497-5100
2		Seegen Medical Foundation Seegan Medical Center	320 Cheonho-daero, Seongdong-gu, Seoul	1566-6500
3		U2 Bio Medical Center	68 Gumma-ro, Songpa-gu, Seoul	02-910-2100
4		Korean Clinical Laboratory	71 Sungnae-ro, Gangdong-gu, Seoul	02-517-1728
5	Busan	Seegen Busan Medical Center	297 Jungang-daero, Dong-gu, Busan	1566-6500
6	Incheon	EONE Laboratories	291 Harmony-ro, Yeonsu-gu, Incheon	1600-00021
7	Gyeonggi	Seoul Clinical Laboratories (SCL)	13 Heungdeok1-ro, Giheung-gu, Yongin-si, Gyeonggi-do	1800-0119
8		Green Cross (GC) Laboratories	107, Ihyeonro 30beon-gil, Giheng-gu, Yongin-Si, Gyeonggi-do	1566-0131
9		Lab Genomics Diagnostic Testing Center	375 Pangyo-ro, Bundang-gu, Sunghnam-si, Gyeonggi-do	031-618-0700
10		SQ Laboratories	53-21 Dongbaek Jungang-ro, Giheung-gu, Yongin-si, Gyeonggi-do	031-283-9270
11		Shinwon Medical Foundation	13-8 Soha-ro, 109-Gil, Gwangmyeong-si, Gyeonggi-do	031-801-5100
12	Chungbuk	Korea Association of Health Promotion Central Testing Center	393 Danjae-ro, Sangdang-gu, Chungju-si, Chungcheongbuk-do	043-292-1107



## Appendix 12. Special Protocol for Safe Management of COVID-19 Related Waste

< As of March 2, refer to the Ministry of Environment's Special Protocol for Safe Management of COVID-19 Related Waste >

### 1. Safe Handling of Healthcare Waste from Isolated Individuals

#### Occurrence and storage

- **Disposal:** Place the healthcare waste in a designated healthcare waste container immediately from the location where the waste was generated (minimize transport within hospital) and seal it (double seal, in designated healthcare waste bag + healthcare waste container, see attachment 2)
  - \* Disinfect before placing the waste and after sealing
  - \*\* For Personal Protective Equipment (PPE; masks, protective suit, etc.) used by medical personnel or waste collectors that do not have the risk of tearing the designated bag or external exposure, corrugated cardboard containers can be used instead of hard plastic containers if there is inadequate supply of hard plastic containers
- Leftover food of the confirmed case must be set apart, placed in the container for healthcare waste from isolated individuals, and disposed of
  - ❖ If the entire hospital is quarantined (cohort isolation) and it is not possible to put food waste into a healthcare waste container, disinfect and batch incinerate (local municipal incinerator or business waste incinerator)
- Bedsheets, pillow covers, blankets, and other washable fabrics can be reused after hot-water washing in a washing machine with detergents or disinfectants according to the guidelines of Central Disease Control Headquarters

**Reference: [COVID-19] Disinfection information for group facilities and public facilities for patients (Central Disease Control Headquarters, Central Disaster Management Headquarters)**

- Wash, in a washing machine, washable fabrics such as bedsheets, pillow covers, blankets, and curtains using detergent or disinfectant
- Properly disinfect mattress, pillow, cushion, or carpet used by the patient by commissioning a professional disinfection company
- ⇒ For detailed information, see disinfection guidelines by Central Disease Control Headquarters, Central Disaster Management Headquarters

- **Storage: Waste must be disposed of on the day it is generated; minimize storage time within hospital**
  - When storing within the hospital, store in designated warehouse **separated from other waste**
  - Biopsic waste must be stored in **dedicated refrigeration facility** (under 4°C), and non-decomposable quarantine healthcare waste should also be **refrigerated as much as possible**
  - **Disinfect storage facility every day**, ensure that **healthcare waste is not visible from the outside** and **limit outside access**

## Collection and transportation

- Place waste in a sealed designated container and **transport directly to a healthcare waste incinerator and incinerate** without going through a temporary storage facility
- Maintain 4 °C or less during transportation in sealed cargo boxes, and **chemically disinfect** every time a cargo box is used

## Incineration

- Upon its arrival, immediately place the waste in the incinerator without removing from the designated container
  - ❖ Monitor the status of handling and final disposal with the Korea Environment Corporation

## Strengthened regulations regarding COVID-19 healthcare waste from isolated individuals

Division	Depositor storage	Transportation	Disposal
Current regulations for healthcare waste from isolated individuals	<ul style="list-style-type: none"> <li>● Storage up to 7 days</li> <li>● Designated hard plastic container</li> <li>● Designated storage facility (refrigerate biopsic waste)</li> <li>● Disinfect storage facility</li> </ul>	<ul style="list-style-type: none"> <li>● Refrigerated transportation</li> <li>● Temporary storage (2 days)</li> </ul>	<ul style="list-style-type: none"> <li>● Dispose within 2 days</li> <li>● Store in designated warehouse (refrigerate biopsic waste)</li> </ul>
<b>Strengthened regulations for healthcare waste from isolated individuals</b>	<ul style="list-style-type: none"> <li>● <b>Commision disposal on the day of arrival</b> (store within 1~2 days)</li> <li>● <b>Refrigerate</b></li> <li>● <b>Disinfect the designated container prior and after waste input</b></li> </ul>	<ul style="list-style-type: none"> <li>● <b>Temporary storage prohibited, transport within day of arrival</b></li> <li>● <b>Chemically disinfect the vehicle for every use</b></li> </ul>	<ul style="list-style-type: none"> <li>● <b>Incinerate within day of arrival</b></li> </ul>

- ❖ However, for self-governing provinces and island areas not connected to mainland, waste can be individually stored (up to 4 days) and promptly transported and handled (within 2 days)

## 2. Safe Handling Regulations of Residential Treatment Center Waste

- Consider all waste (including food waste) from confirmed cases as **Healthcare Waste from Isolated Individuals: (1) disinfect, seal, then dispose (2) regularly disinfect, (3) incinerate all waste daily**
  - \* In the special case of **COVID-19 Residential Treatment Center**, recognizing its medical support system, it is considered a **healthcare waste discharge organization** under [Waste Management Law]
    - Disposal: **Patients** must **disinfect** the waste, **place and seal it in a designated bag and hard plastic container**, then leave it **on their doorstep**
    - Collection and storage: At a **designated time**, **management personnel** will **collect and disinfect the waste from the doorstep**, then store it in a **designated storage area**\*

- \* The healthcare waste must not be visible from the outside (separate space, temporary container, etc.); limit outside access; chemically disinfect at least once per day
- Transportation and management: Designated collection/transportation company must transport the waste from the storage site **within the day** to the designated management company and **incinerate** it
- Consider all waste generated during Residential Treatment Center operations that **have not come into contact with confirmed case(s)** as **healthcare waste** and **incinerate**
  - Disinfect, seal, and **incinerate daily** all healthcare waste from isolated individuals; but **use corrugated cardboard containers** instead of hard plastic containers
- **Designation and management of collection/disposal contractors** for the Residential Treatment Center
  - Regional Environmental Office will assign a healthcare waste collection/disposal contractor to each residential treatment center in its jurisdiction; Regional Ministry will monitor volume of waste generated by those facilities on a daily basis and report to Central Ministry of Environment

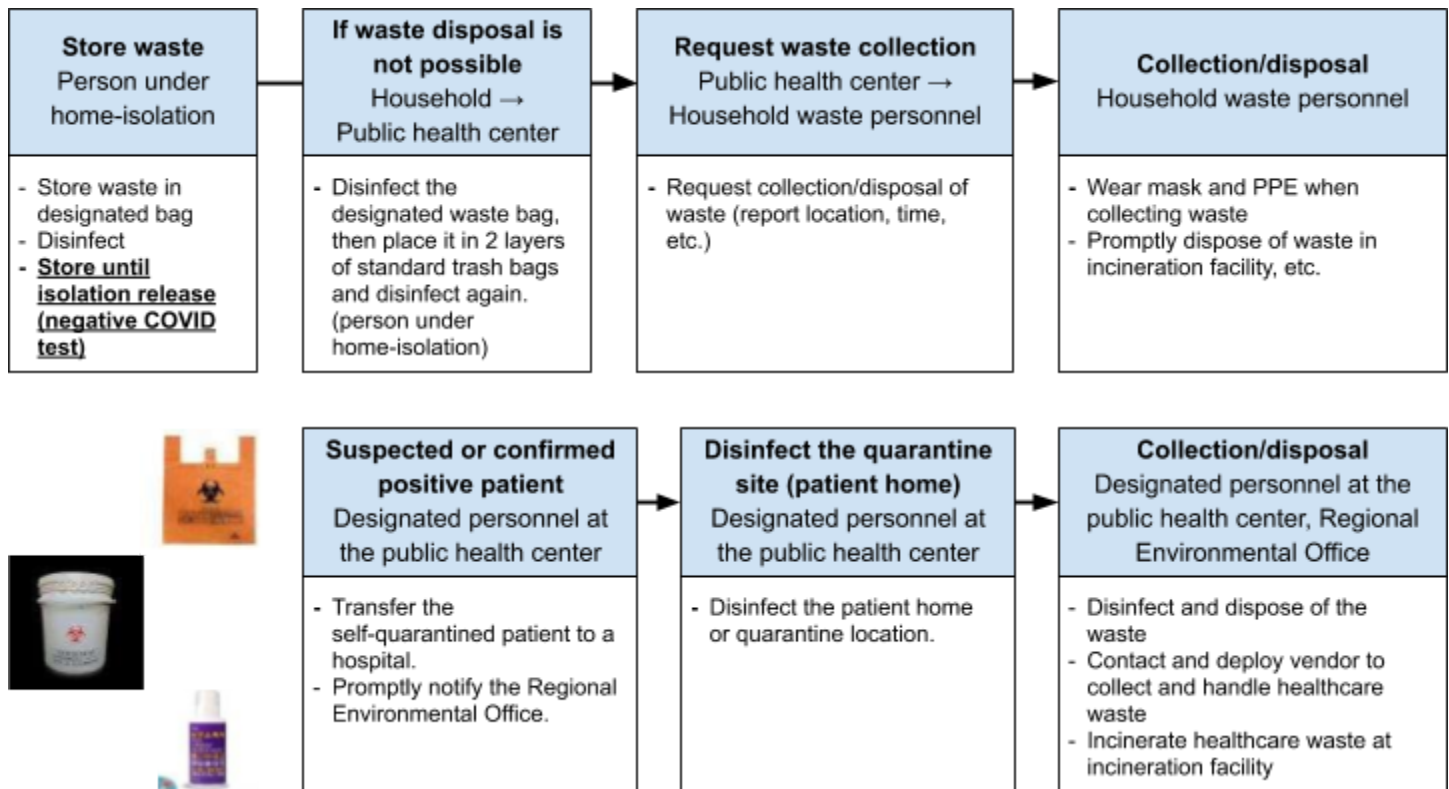
### 3. Safe Management of Home-Isolated Person(s)' Waste

- **Provide designated bag and disinfectant free of charge** to home-quarantined/isolated person(s)
  - The Regional Environmental Office should provide these through **city, county, and district public health centers free of charge**
- \* If confirmed case was home-isolated due to shortage of hospital beds, etc., also provide designated hard plastic containers for healthcare waste
- Provide waste disposal and **safe handling manual regarding healthcare waste (Attachment 4)**
  - \* Disinfection & storage plan, and request for cooperation after positive test results, etc.
- Dispose of the waste according to the manual:
  - 1) If the waste was produced by an **asymptomatic** person:
    - **Disposal:** As a **general rule**, dispose of waste (including food waste) only in exceptional circumstances; home-quarantined persons must disinfect waste, place in **designated healthcare waste bag, seal**, and place in a **standard waste bag**; contact public health center for disposal
    - ❖ If no designated bag is available, then double seal it in standard waste bags
    - **Collection and Management:** **Cooperate** with **local government health officers** monitoring home quarantine; collect waste using **city, county, and district waste management departments** (household waste treatment companies) and **incinerate as municipal waste**
    - ❖ However, if the existing municipal household waste treatment method is not incineration, such as landfill, treat safely according to existing method
  - 2) If the waste was produced by a **symptomatic** person or one who was **confirmed** during home isolation:
    - **Disposal:** Disinfect waste, place in a **designated healthcare waste bag, seal**, and place in a **standard waste bag; store**
    - **Collection and management:** Safely transport the waste to a public health center; **incinerate** the waste on the same day in a designated hard plastic container **through a medical waste collection/transport/management company** in contract with the public health center

- ❖ If incineration on the same day is difficult due to overflow or other unavoidable circumstances, contact Regional Environmental Office for handling
  - ❖ If released from home isolation (negative test result), waste that was stored in a designated healthcare waste bag should be placed in standard waste bags and disposed of as household waste for regular incineration
- 3) If COVID-19 confirmed case was home-isolated due to bed shortage:
- **Disposal:** Disinfect the waste, place and **seal** it in a **designated** medical waste bag, place it again in a **designated hard plastic container**, and **store** until transportation to hospital
  - **Collection and management:** Safely transport waste to hospital; incinerate on the same day **through a medical waste collection/transport/management company** in contract with public health center
  - ❖ If incineration on the day is difficult due to overflow or other inevitable circumstances, contact Regional Environmental Office for handling
  - **Emergency collection:** If it is difficult to process through the aforementioned public health centers due to an explosion of confirmed cases, a separate emergency collection/transportation/processing system can be configured and applied under the jurisdiction of Regional Environmental Office (detailed treatment plan : Attachment 5)
    - Regional government should receive discharge requests and promote separate collection and disposal by designating a dedicated private collection/disposal company

#### 4. Waste from Public or Multi-Use Facilities Visited by Confirmed Cases

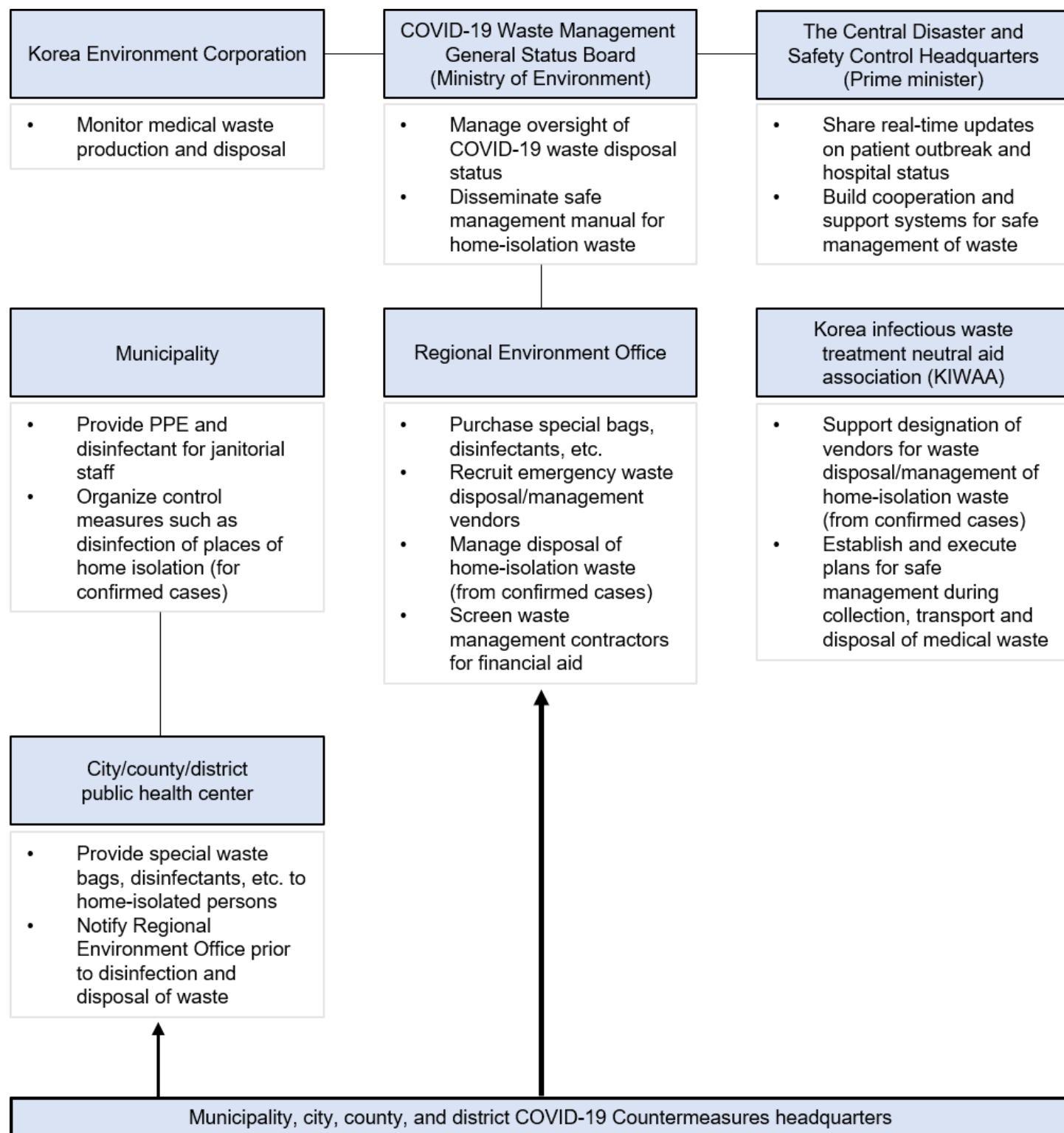
- The **area exposed to a confirmed case** should be properly **disinfected** according to the guidelines of KCDC; it is recommended that the area be closed for a day for sufficient ventilation before reopening, and **related waste** should be placed in standard waste bags, **disinfected and double sealed**, then **incinerated at a public incinerator**
  - Treat PPE (e.g. coverall suit, mask) used during disinfection as healthcare waste and deal with accordingly
- Waste generated by **group facilities and public facilities** after preventive disinfection should be **disinfected and double sealed, then incinerated at a public incinerator**

**Waste storage and disposal system for home-isolated persons****5. Support for Waste Collection Workers and Accident Prevention**

- **Waste collection workers:** Medical waste management/disposal agents and workers collecting/transporting **COVID-19** waste must **strictly adhere to PPE usage** guidelines to prevent infection and transmission
  - \* Strictly adhere to the KCDC guidelines for PPE by using personal disinfectants, masks, goggles, protective gloves and disposable gowns
- **Patient transfer and EMS staff:** Practice **appropriate disposal of medical waste** generated from **transporting suspected COVID-19 cases, etc.** (municipal level)
- **Prevention of transportation accidents:** Step up **disinfection of medical waste transport vehicles**; **Observe safe driving** and enforce accident prevention measures (refer to safety guidelines from Korea Infectious Waste Treatment Mutual Aid Association (KIWAA))
- **Special inspections:** **Ensure** that all parties **adhere to protocols** using designated inspectors
  - General hospitals will be inspected by the Regional Environmental Office
  - Healthcare facilities other than general hospitals (e.g. private clinics, dental clinics, traditional medicine clinics, nursing homes) will be inspected by the local government
  - Medical waste disposal contractors and incinerators will be inspected by the Regional Environmental Office

## Attachment 1. COVID-19 Healthcare Waste Management System

### Management system



## Attachment 2. Designated Healthcare Waste Containers and PPE

### □ Designated Healthcare Waste Containers

		
Designated healthcare waste bag	Hard plastic container	Corrugated cardboard container

### □ Personal Protective Equipment (PPE)

Gloves, protective clothing	 
Masks	

Goggles/face shield	 The image displays two different types of personal protective equipment (PPE) for eye and face protection. On the left is a pair of safety goggles with a clear, wrap-around lens and a black strap. On the right is a face shield, which consists of a clear plastic visor attached to a black headband with adjustable side straps.
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## Attachment 3. Residential Treatment Center Waste Management & Treatment Manual

### Required items for waste disposal

- Required items for waste disposal are 1) Waste disinfectant 2) Designated healthcare waste bag (orange bag) 3) Designated healthcare waste container (hard plastic) 4) Designated healthcare waste container (corrugated cardboard)

### How to dispose of waste generated by isolated patients in residential treatment center - healthcare waste from isolated individuals

- Place all waste generated in the isolation room in the provided healthcare waste bag (orange bag) without the need for separate disposal for recycling. Disinfect the inside of the waste bag twice: first before placing the waste, and second after placing the waste. Tie the bag so that the contents do not show through the opening.
- Place the healthcare waste bag (orange bag) in the healthcare waste container (hard plastic), disinfect before closing the lid, then close the lid and seal the container.
- Place the sealed plastic container at the door of the isolation room after disinfecting the exterior once more.
- Only waste in sealed containers will be collected.
- Discharged waste is collected daily and should be stored in a separate temporary storage area in the residential treatment center.



### How to dispose of waste generated by operational staff in residential treatment center - general healthcare waste

- Waste from staff areas and waste that has not been in direct contact with confirmed cases (e.g. boxes used for packaged meals and other aid supplies) should be treated as general healthcare waste.
- All waste should be placed in the designated healthcare waste bag (orange bag), without the need for separate recycling, and should be disinfected before sealing.

- After disinfecting, tie the bag so that the contents are not visible, then place the bag in the designated healthcare waste container (cardboard).
- Disinfect the exterior of the sealed waste container (cardboard) prior to disposal.
- Discharged waste is collected daily and should be stored in a separate temporary storage area in the residential treatment center.

	
<p align="center"><b>Designated healthcare waste bag (orange bag)</b></p>	<p align="center"><b>Designated healthcare waste container (corrugated cardboard)</b></p>

### **How to temporarily store, transport and incinerate waste in residential treatment center**

- Separate (temporary) storage areas must be disinfected daily, with additional disinfection as necessary.
- Waste stored in separate (temporary) storage areas must be collected, transported and incinerated daily by healthcare waste disposal vendors.

## **Attachment 4. Waste Management & Disposal Manual for Home-Quarantined Persons**

1. Guideline for disposal of household waste for unconfirmed cases without COVID-19 symptoms
  - Store domestic waste (including food waste) in the designated bag provided. The upper layer of the waste in the designated bag, as well as the outside of the bag, should be disinfected thoroughly before being stored. Disinfection of the trash bags is recommended at least once daily.
  - Waste should only fill the designated bag up to 75% of full capacity, so that it can be sealed. After filling the bag, disinfect the bag with disinfectant, then tie it closed so that it is sealed. Store in a separate storage area. Please disinfect at least once a day.
  - Refrain from disposing of the designated bag outside. However, if the waste in the designated bag must be disposed of outside, disinfect the bag thoroughly before placing it in a separate standard waste bag. Contact the designated personnel at the public health center to have the bag collected and handled.
  - Until designated bags are provided, use a standard waste bag. Before disposal of the waste outside, place the first bag inside a new standard waste bag.
2. Guideline for disposal of domestic waste for unconfirmed cases with suspected COVID-19 symptoms
  - If you (or someone you live with) begin(s) to have symptoms suggestive of COVID-19, contact the public health center immediately. Follow Guideline 1. on storing domestic waste in designated bags. Public health authorities along with a professional disposal vendor will collect and handle the waste safely and free of charge.
3. Guideline for disposal of domestic waste for confirmed cases of COVID-19 under home isolation
  - Follow Guideline 1. on storing domestic waste in designated bags, and store the bags in the provided hard plastic container until transfer to a hospital. Following transfer, public health authorities along with a professional disposal vendor will collect and handle the waste safely and free of charge.

## Attachment 5. Detailed Operation Guidelines on Emergency Collection and Transport System for Healthcare Waste

### I. Purpose and Basic Approach

#### 1. Purpose

- After the **Infectious Disease Crisis Alert** was raised (from Alert to **Serious** on Feb. 23), a sharp increase in the number of confirmed patients led to a large number of "confirmed patients in home isolation" who could not be transported to a hospital
- ⇒ Set up a **system for emergency collection, transport and disposal** of waste from "confirmed patients in home isolation"

#### 2. Basic Approach

- **Manage** waste from "confirmed patients in home isolation" as "healthcare waste from isolated individuals"
  - 1) If the **confirmed patient is isolated at home**
    - ⇒ The **Regional Environmental Office or City/County (District) oversees the visits and collection of waste by the healthcare waste management vendor**
    - ❖ Waste from general (unconfirmed) patients in home quarantine should be handled as domestic waste according to the Special Protocol for the Safe Management of Waste
  - 2) If the **home-isolated confirmed patient is transferred to a hospital**
    - ⇒ The **public health center oversees the collection of "healthcare waste from isolated individuals" and commissions the waste disposal to a healthcare waste management vendor**

### II. Where and When the Guideline Applies

#### 1. Where:

**Regions where the application of a system for emergency collection, transport and disposal of "healthcare waste from isolated individuals" is deemed necessary by the Head of the Regional Environmental Office**, due to a sharp increase in the number of confirmed patients and subsequent large number of home-isolated patients who could not be admitted to a hospital (or Residential Treatment Center)

#### 2. When:

This guideline **applies from the first day it comes into effect until the end of the emergency collection and transport system**

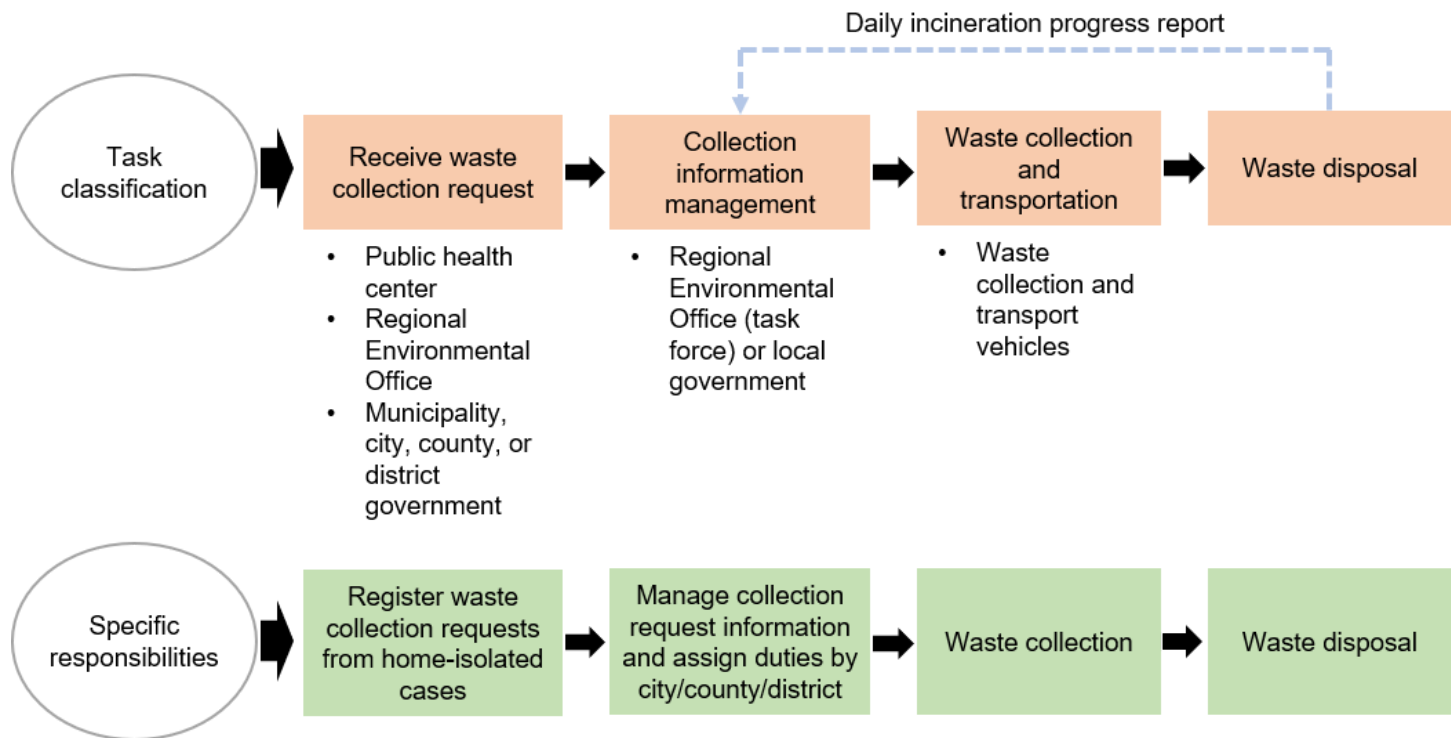
- ⇒ Waste generated after the application period of this guideline shall be handled according to the *Special Protocol for the Safe Management of COVID-19 Related Waste*

### III. Guideline for the Collection and Disposal of Waste from Home-Isolated Persons

#### 1. Roles of Organizations

- For the **regional environmental office, city/county (district) and public health centers**
  - **Register disposal request for healthcare waste generated from “home-isolated confirmed cases”**
    - **Register waste collection request by phone** in the **region of home-isolated confirmed case**
    - **Relay information** registered daily on **healthcare waste collection requests to Regional Environmental Office**
  - ⇒ Create designated **"task force"** for each related organization and **establish contact network** for **registration and handling of information** on collection requests for **healthcare waste from home-isolated persons**
- For the **regional environmental office**
  - **Establish and operate a processing system for collection and transport of healthcare waste from “home-isolated confirmed cases”**
    - **Manage the status of daily collection requests for healthcare waste from home-isolated persons** received by the **city/county (district) and public health centers**
    - **Allocate "collection and transport vehicles"** based on **daily collection requests**
    - Manage **daily status of collection, transport and handling of waste** by **"collection and transport vehicles"**
  - ⇒ **Establish contact network** of related organizations, including **local governments**, for the purpose of registering and managing collection requests for **healthcare waste from home-isolated persons**
- For the **city/county (district) public health centers**
  - **Promote methods of disposal for healthcare waste from “home-isolated confirmed cases”** (Reference 1)
    - **Provide information on how to make requests by phone** for the collection of healthcare waste from home-isolated persons (e.g. contact information for each related organization)
  - **Distribute designated containers** (garbage bags) **for healthcare waste** in residential location of **“home-isolated confirmed case”**

## 2. Collection and Processing System



### 1) Registering collection requests for healthcare waste from “home-isolated confirmed cases”

- **Registration agency:** public health centers at city/county (district) level
- **Registration method:** Register waste collection request information by phone, including the name, waste volume, contact information, etc. of the requestor
  - ❖ Register using "Collection Request Form for Healthcare Waste from Home-Isolated Persons" (Reference 2)
- **Registration Information Management:** public health centers should report status of waste collection requests to the Regional Environmental Office by e-mail (by 5PM every day)

### 2) Allocating vehicles for collection and transport of healthcare waste from home-isolated persons



- **Responsible agency:** Regional Environmental Office or city/county (district) government
- **Main task:** Manage status of waste collection requests registered by public health centers and city/county (district) government
- **Composition of collection/handling group:** Allocate "waste collection and transport vehicles" by region based on an assessment of daily collection requests
  - Allocate vehicles considering request locations, waste volumes, etc.
- **Management of collection/handling:** Manage daily data on actual status of collection and disposal versus assigned location and collection volume per vehicle

### 3) Collection, transport, and disposal of healthcare waste from isolated persons

- **Responsible agency: KIWAA (Korea Infectious Waste Treatment Mutual Aid Association)\***
- **Main task: Assist** in procuring and operating “**waste collection and transport vehicles**” based on **waste collections requests** registered by **Regional Environmental Office**
  - If an existing fleet of **healthcare waste collection/transport vehicles** is **not sufficient** to handle the waste volume, **temporary vehicles** (e.g. refrigerated trucks) may be repurposed and deployed
  - The repurposed **healthcare waste collection/transport vehicle** should be marked with the following sign **on both sides and the back of the vehicle**

*\* Translators’ note: KIWAA is an association of about 15 private companies that provide medical waste management services.*

#### Signage specifications for special healthcare waste transport vehicles

	
Left and right sides of the vehicle	Back of the vehicle
30cm (11.8 in) x 60cm (23.6 in)	20cm (7.9 in) x 40cm (15.7 in)
Letters in green; Background in white	

- All waste collection and transport staff must sign a Privacy Protection Contract prior to collecting healthcare waste (Reference 3)
- Healthcare waste collected from isolated persons **must be transported the same day** to a **healthcare waste disposal vendor**
- **Report all collected/transported waste to the Regional Environmental Office** that has jurisdiction over the waste disposal vendor. Reports must be filed on a daily basis.  
⇒ Use “**Collection Request Form for Healthcare Waste from Home-Isolated Persons**”

## **Reference 1. Instructions for Home-Isolated Patients Awaiting Hospital Admission and Local Governments / Public Health Centers**

### **1. Instructions for Home-Isolated Patients Awaiting Hospital Admission**

- Household trash (including food waste) must be placed in government-issued, designated trash bags. The bags should only be filled up to 75% of full capacity. The top opening of each bag and its external surface should be thoroughly disinfected, and the bag should be stored in a separate area in the home until collection. (Disinfection is recommended at least once every day)
- Refrain from leaving the filled trash bags outside of the household. If there is no room to store the bags inside, please thoroughly disinfect the bags, and call the designated personnel at the public health center. (Communicate the approximate volume of trash as well)
- Once a waste collection request has been submitted, the Regional Environmental Office or local government will guide with an approximate time of waste collection. Please leave the stored waste bag(s) at the door shortly before the expected collection time.

### **2. Instructions for Local Governments and Public Health Centers**

- As soon as a waste collection request is received from a home-isolated patient awaiting hospital admission, immediately relay the information to the Regional Environmental Office
- Please also cooperate in handling healthcare waste from Emergency Medical Service (EMS) workers and epidemic control staff working with patients awaiting hospital admission.



## Appendix 13. Frequently Asked Questions (FAQs)

- ❖ The information below is subject to change as clinical epidemiological characteristics of COVID-19 are not fully known

### 1. Infectious Disease Information

#### Q1. What kind of virus is Coronavirus?

- Coronavirus is a virus that can spread to both animals and humans; six types of coronaviruses are known to spread to humans.
- Among these, four strains can cause cold-like symptoms, and the other two are MERS-CoV and SARS-CoV.
- The cause of the current pandemic is SARS-CoV-2; this virus has been confirmed to share an 89.1% similarity in nucleic sequence with the SARS-like coronavirus from bats.

#### Q2. How does COVID-19 spread?

- The droplets produced when an infected patient coughs or sneezes can enter another person's respiratory system; or the virus on one's hands could enter the host when one touches the eyes, nose, or mouth, via mucous membrane.
- Or, if the droplets of an infected person contaminates the surface of an object, the virus could spread when another person touches said object and then touches the eyes, nose, or mouth. Proper hand hygiene is key because the virus can spread via mucous membranes.

#### Q3. What are the symptoms of COVID-19?

- The most common symptoms include fever, fatigue, and dry coughs; some patients may experience pain, stuffy nose, runny nose, sore throat, or diarrhea. These symptoms are typically mild; some people may be asymptomatic with no discomfort despite being infected.
- Most (approx. 80%) patients will recover without treatment. But elderly patients or those with chronic conditions, such high blood pressure, diabetes, or other heart diseases, have a higher risk of becoming severely ill, and therefore those with fever, coughs and difficulty breathing should be treated.
  - ❖ (Source: WHO, Q&A on coronaviruses (COVID-19))

#### Q4. Can COVID-19 spread from asymptomatic cases?

- The main way COVID-19 spreads is through droplets that are produced when an infected patient coughs. Transmission of the infection by asymptomatic patients has not been clearly elucidated. However, initial

symptoms of many infected patients are mild and can go unnoticed, which is why COVID-19 can spread from these cases unknowingly. .

- Evaluation of studies on the infectious period of the novel coronavirus is ongoing, and we plan to share the results once they become available.
- ❖ (Source: WHO, Q&A on coronaviruses (COVID-19))

## 2. Current Number of Cases

Q1. How many COVID-19 cases have occurred overseas?

- The number of cases abroad can be found online at <http://ncov.mowh.go.kr> under “Case Trends”.

Q2. How many COVID-19 cases are in South Korea?

- The number of cases in South Korea can be found online at <http://ncov.mowh.go.kr> under “Case Trends”.

## 3. Close Contacts

Q1. How is close contact defined?

- Criteria for a close contact is defined by the Municipal COVID-19 Immediate Response Task Force’s evaluation of exposure.
- Factors taken into consideration include the confirmed case’s symptoms, presence of a mask, and degree of exposure (e.g. location and duration of contact). We define the range of close contact starting from a contact event that occurred one day prior to symptom onset of the confirmed case.

Q2. If a health worker wearing PPE came into contact with a patient who wasn’t wearing a mask, is the health worker considered a close contact?

- If the health worker was wearing and removing the appropriate PPE\* in accordance with the situation in a health facility, he/she is not considered a close contact. Criteria for close contact are defined by the Municipal COVID-19 Immediate Response Task Force’s evaluation. Factors taken into account for final decision include the confirmed case’s symptoms, presence of a mask, duration of travels, degree of exposure, and timing of contact (final contact with a confirmed patient in the past 14 days).

\* Refer to page 24-25 of Protocol Edition 7-3 Appendix

Q3. What happens if I am classified as a close contact?

- Quarantine at a home, facility, or hospital for 14 days from last contact with a confirmed patient.

- A public health center will issue a Home Quarantine Notice to the close contact, provide home quarantine guidelines, and assign a dedicated official who checks in twice a day on any fevers and respiratory symptoms until release from home quarantine.

Q4. What are the precautions to take during home quarantine?

- The home-quarantined should live/stay in an isolated area. Frequently ventilate the room by opening the windows while the door is shut. If possible, a separate bathroom and sink should be available for the home-quarantined person.
- If using a shared bathroom or sink, disinfect the area (with bleach or other household disinfectants) before other people use them.
- Living guidelines for the home-quarantined are as follows: Use separate personal items, including towels, dishware, and mobile phone. Wash clothes and bedding separately. Eat separately, separate dishware and clean them thoroughly before anyone else uses them.

Q5. What if I don't have a room where I can separate myself from other people?

- In case it is not possible to find a separate living area within the residence or additional assistance is needed, the local government provides a suitable home quarantine facility or a quarantine/isolation room at a hospital.

Q6. Is there livelihood support for home quarantine?

- Yes, living expenses are supported and paid leave provided for home quarantine. For details, please inquire with your Community Service Center.

Q7. Is going outside during home quarantine punishable by law?

- According to the Infectious Disease Control and Prevention Act, Article 80-4, failure to cooperate with quarantine orders may result in a fine of up to KRW 3 million.

Q8. I am an asymptomatic foreigner under home quarantine and would like to return to my home country. Would I be permitted to leave?

- Do not leave the country. Once the public health center issues a Home Quarantine Notice, engaging in public activities or leaving the country is prohibited during the quarantine period, regardless of whether or not the home-quarantined person has symptoms.

Q9. I would like to check the whereabouts/movements of a confirmed case.

- The alert level for COVID-19 was raised to “SERIOUS” (“red alert”) on February 23, 2020 after COVID-19 spread to local communities. This means that the focus has shifted from contact tracing confirmed cases to early detection and treatment.
  - As such, the government has replaced location tracing information with the latest updates about patients in each local community. The local governments are sending text messages with updated and detailed information about where patients have been.
  - Information on the whereabouts of a confirmed patient, starting one day prior to symptom onset, will be released if there are spatial and time-based risks of transmission. Personal information is not released, and persons who may have been exposed to the patient are contacted individually so that preventative measures may be taken.
- ❖ KCDC homepage > COVID-19 > Latest Updates > Cases in Korea by City/Province

*\* Translators' note: In this translation, the answer to this question has been updated with the latest additional information from KCDC FAQs online as of Mar. 31, 2020, which became available after the original appendix was published.*

## 4. Testing

### Q1. Who is eligible to get tested?

- In accordance with KCDC guidelines, patients classified as suspected cases and symptomatic Patients Under Investigation (PUI) may get tested.
- There is no need to get tested out of anxiety. Kindly trust the expert advice of physicians.

<b>Suspected case</b>	A person who develops a fever or respiratory symptoms (coughing, difficulty breathing, etc.) within 14 days of coming into contact with a symptomatic confirmed case
<b>Symptomatic Patient Under Investigation (PUI)</b>	1. A person suspected of having COVID-19 as per doctor's diagnosis including pneumonia of unknown etiology
	2. A person who develops a fever (37.5°C and above) or respiratory symptoms (coughing, difficulty breathing, etc.) within 14 days of travelling to a country with local transmissions* of COVID-19, such as China (including Hong Kong and Macau) * Refer to the WHO website (local transmission) or the KCDC homepage > COVID-19 > Incidences > <b>Countries with Local Transmission</b>
	3. A person with an epidemiologic link to the collective outbreak of COVID-19 in Korea, who develops a fever (37.5°C and above) or respiratory symptoms (coughing, difficulty breathing, etc.) within 14 days
<Source: Response Guidelines for COVID-19 (Edition 7-3), Central Disease Control Headquarters, as of March 15, 2020>	

### Q2. Where can I get tested?

- Testing is available at COVID-19 screening centers that are equipped to collect samples.
- The following link provides a list of COVID-19 screening centers (in Korean) where you can get tested.

- ❖ KCDC homepage > COVID-19 > Find COVID-19 Screening Centers nearby  
(Link) [http://www.mohw.go.kr/react/popup\\_200128.html](http://www.mohw.go.kr/react/popup_200128.html)
- For further inquiries, please contact the KCDC call center (1339 or region code + 120) or consult a public health center.

### Q3. How is the test performed?

- Specimen collection: Specimen is collected by physicians, nurses, and medical technicians at designated locations (e.g. COVID-19 screening centers). It is mandatory to collect specimens from the upper respiratory tract. Specimens from the lower respiratory tract are collected from patients producing sputum. Testing may cause discomfort or pain.
  - ❖ Nurses and medical technicians collect samples under the guidance of physicians

<b>Upper respiratory tract specimen</b>	Combine nasal (nasopharyngeal) and throat (oropharyngeal) swab (in one tube) <ul style="list-style-type: none"> <li>- Nasal swab: insert cotton swab into the nostril until it reaches the posterior nares</li> <li>- Throat swab: insert a cotton swab and scrape the insides of the throat</li> </ul>
<b>Lower respiratory tract specimen</b>	Collect sputum into a container by coughing deeply, making sure not to include saliva or other liquids <ul style="list-style-type: none"> <li>- Do not induce sputum in case of a dry cough as sputum induction may generate aerosols</li> </ul>

- Genetic testing: COVID-19 Screening Centers that are able conduct their own tests may do so. Screening centers that are not equipped to do their own testing can inquire with KCDC-designated laboratories.

### Q4. How long does it take to get the genetic test result back?

- Genetic testing itself takes about six hours. However, considering the time for sample transportation and other delays, results can be confirmed in one to two days after testing.

### Q5. What is the cost of getting tested?

- Diagnosis and testing are free of charge if requested by a suspected case. However, general check-ups, X-rays, other tests and treatments are not covered.

### Q6. If I don't have sputum, is it okay to not induce sputum but collect a sample from only the upper respiratory tract?

- Yes. It is required to collect a sample from the upper respiratory tract. If a patient is producing sputum, then one sample each from the upper and lower respiratory tracts is collected and sent. However, if the patient does not produce sputum, we do not induce sputum.

Q7. When collecting my own sputum for testing, does it need to be in a negative pressure room?

- It does not need to be in a negative pressure room. However, due to the possibility of aerosol generation, it is recommended that sputum be collected in a separate room that is not connected to internally circulating air and well-ventilated with external air.

Q8. What are the standard precautions for sample collection?

- Standard precautions refer to the most basic standardized guidelines used in procedures for and care of all patients in medical facilities to prevent spread of infectious diseases.
- Standard precautions should be followed when handling a patient's blood, bodily fluids, secretions, excretions, damaged skin, and membranes; including caution with contact, droplets (greater than 5 microns in diameter), and airborne particles.
  - ❖ Source: KCDC. Guidelines for Prevention and Control of Healthcare-Associated Infections (2017), KCDC homepage > Notices/Resources > Guidelines

## 5. Treatment

Q1. Is there a vaccine for COVID-19?

- Currently, there is no known vaccine for COVID-19.

Q2. How are confirmed cases being treated?

- Treatment for COVID-19 is symptomatic treatment (treating the symptoms of disease).
- Absence of treatment for COVID-19 means that there is no targeted therapy for the virus yet; it does not mean that the patient cannot be treated.

Q3. Does the state cover treatment expenses for confirmed COVID-19 patients?

- In accordance with the Infectious Disease Control and Prevention Act, treatment is covered by the state.

## 6. Isolation and Isolation Release

Q1. What is concurrent group isolation (cohort isolation)?

- Concurrent group isolation (cohort isolation) places patients who have been exposed to or infected by the same pathogen in the same hospital room or ward, and is sanctioned based on clinical assessment and microbiological test results following the epidemiology of the pathogen and method of transmission.

Q2. Under what circumstances should the patient be placed under cohort isolation?

- Cohort isolation can be considered when there are not enough rooms to distribute a large number of patients requiring treatment, and as a precaution to prevent disease spread.
- It is important to keep a minimum 2-meter distance between beds, and curtains can be used as additional physical separation.

Q3. What is the standard for isolation release of asymptomatic confirmed patients?

- On the 7th day after confirmation, when two tests conducted 24 hours apart give negative results, the patient can be released from isolation. If after 7 days the PCR test is positive, subsequent testing (e.g. on the 10th day, 14th day) is determined at the discretion of the medical team. The patient can be released from isolation if two consecutive tests at a 24-hour interval are negative.

Q4. What is the standard for release of cohort isolation?

- Under cohort isolation, if a patient is afebrile without the use of antipyretic drugs, other clinical symptoms resolve, and two consecutive tests 24 hours apart are negative, the patient can be released.
- Even if other patients in the cohort do not meet the isolation release criteria, a patient can be released from isolation if the clinical and testing criteria are met.

Q5. What is the standard for isolation release of symptomatic confirmed patients?

- **Isolation release of symptomatic confirmed patients must be done once clinical and testing criteria have been met.** Clinical criteria include being afebrile without use of antipyretics and resolution of clinical symptoms. Testing criteria is 2 negative PCR test results at a 24 hour interval. The patient is released from isolation once both criteria have been met.
- If only the clinical criteria are met, the patient may isolate at home or in another facility. However, release from isolation is only allowed once testing criteria are also met.

## 7. Travel

Q1. I have made overseas travel arrangements. Am I allowed to travel?

- As COVID-19 spreads globally, use extra caution for overseas travel. Before travel, please refer to the overseas outbreak advisories provided by the KCDC's "Overseas Infectious Diseases NOW" and the

Ministry of Foreign Affairs (MOFA) Overseas Travel Safety Homepage to check for travel restrictions and quarantine measures imposed by each country.

- ❖ Overseas Infectious Diseases NOW: <http://xn--now-po7lf48dlsm0ya109f.kr/>  
MOFA Overseas Travel Homepage: <http://www.0404.go.kr/m/dev/main.do>

- **Before travel**

- Refer to KCDC's "Overseas Infectious Diseases Now" for outbreak information and preventive measures
- Refer to MOFA's Overseas Travel Safety Homepage to check for countries implementing travel restrictions

- **During travel**

- Avoid contact with poultry and wildlife
- Avoid contact with persons with respiratory symptoms (fever, difficulty breathing)
- Refrain from visiting places that carry risk of infection, such as local markets
- Be vigilant with personal hygiene (handwashing, coughing etiquette)

- **After travel**

- If fever or respiratory symptoms (cough, difficulty breathing, etc.) occur, contact KCDC (1339, area code + 120) or a public health center
- If you have developed suspect symptoms and wish to be examined, **visit the COVID-19 Screening Center** in your region
- Before examination, indicate your travel history to the healthcare provider

## Q2. What are the precautions after traveling to China?

- Foreigners who have visited Hubei Province within 14 days before entry are prohibited from entering the country; residents of Korea who have visited Hubei Province within 14 days before entry must confirm their home address and contact information and commence home quarantine procedures (quarantine measures pursuant to Quarantine Act).
- Residents of Korea entering from Hubei Province must notify their municipality at the quarantine station and the public health center should monitor home quarantine and any symptoms that occur for 14 days.

## 8. Care of Suspected Cases and PUI

### Q1. Under what circumstances do physicians suspect that a symptomatic Patient Under Investigation (PUI) may have pneumonia of unspecified origin or COVID-19?

- When a patient presents with symptoms of pneumonia of unknown etiology or respiratory symptoms (cough, shortness of breath, etc), physicians consider COVID-19 as a possible cause of disease based on travel history and contact with known/suspected cases.



## Q2. Can suspected patients visit general healthcare facilities other than COVID-19 Screening Centers?

- Suspected patients (symptomatic close contacts of confirmed cases) have a high likelihood of being COVID-19-positive. They should avoid general healthcare facilities and contact a public health center or the KCDC Call Center (1339 + 120) for referral to a COVID-19 Screening Center near them (e.g. healthcare facility, public health center) for appropriate screening and treatment.

## Q3. What is the difference between a suspected patient and a symptomatic Patient Under Investigation (PUI)?

- Suspected patients have a high likelihood of being COVID-19-positive based contact with confirmed cases. PUI have a lower likelihood of being COVID-19 positive than suspected cases, but may still be at risk based on travel to China and other areas where COVID-19 is endemic, any epidemiological link to clusters of disease in Korea, and/or COVID-19 is suspected due to pneumonia of unknown etiology.
- After undergoing specimen collection at their neighborhood healthcare facility, PUI are asked to read and become familiar with the information in **Section VII**.

## Q4. What should suspected patients and symptomatic PUI be aware of when reporting?

- Suspected patients and symptomatic PUI must fill out the section on the infectious disease reporting form labeled “Infectious disease occurrence information” under “Special circumstances,” with the category below that best fits their circumstance.
  - \* Since financial support for COVID-19 testing is only available for reported cases, suspected cases and PUI must report as “Class 1 infectious disease: Novel infectious syndrome”
    - **PUI and suspected cases must be reported** through this form, and if found to be positive, must follow the protocol for confirmed cases

### Classification of suspected cases

- Symptomatic close contacts of confirmed cases

### Classification of symptomatic PUI

- Category 1: Suspicion of COVID-19 or pneumonia of unknown etiology based on physician assessment
- Category 2: Travel to China or other areas with regional COVID-19 transmission
- Category 3: Epidemiological link to known domestic cluster outbreak of COVID-19

## Q5. When a symptomatic PUI goes to a general healthcare facility, is patient management (mobility guidance, health education, etc.) carried out by this facility?

- Yes. Until test results come back, the general healthcare facility should carry out health education regarding e.g. refraining from going outside, using public transportation, and using public facilities; proper handwashing techniques; and coughing etiquette.

## 9. Other

### Q1. What are the infection prevention measures for public facilities?

- Public facilities should implement basic infection control measures including providing hand sanitizer and requiring employees to wear masks. Please refer to guidelines requiring public events to strictly adhere to infection prevention measures.

### Q2. What happens to the public facilities where a confirmed COVID-19 patient has recently been?

- ❖ Refer to [Guide to disinfecting public facilities used by a COVID-19 patient, Version 2-1]
- Trace the movement of the COVID-19 patient to decide the disinfection area and disinfection method
- If the patient's movement cannot be traced, select targets and areas where there are high levels of usage and contact by the general public, and create a disinfection plan
- For areas in the public facility the patient did not use, carry out regular disinfection
- When disinfecting facilities used by COVID-19 patients, evacuate the area; time until facility can be used again depends on disinfectant and ventilation method
  - Although the virus itself is eliminated by disinfection, use the facility again only after sufficient ventilation, taking into consideration the type of disinfectant used
- In particular, if sodium hypochlorite was used to disinfect, considering its toxicity and odor, ventilate the facility until the next day; the facility can be used 2 days after the disinfection

### Q3. Can I receive packages from China?

- Much is still unknown regarding transmission of COVID-19
- Using SARS and MERS as reference, the survival rate of this type of coronavirus on the surface of objects is considered low, so transmission through packaging surfaces on items that take a certain amount of time to be shipped and delivered is very unlikely
- The WHO and the US CDC state that "there is no evidence to support transmission of COVID-19 via imported goods, and there are no COVID-19 cases associated with imported goods"
  - \*source: US CDC, Coronavirus Disease 19 (COVID-19) FAQs

### Q4. How do you disinfect at home when there is a confirmed case in the household?

- ❖ Refer to [Infection prevention of public facilities used by COVID-19 patients; public facility disinfection guide Version 2-1 ]
- 1. Wear a medical-grade mask and gloves before starting the disinfection, and do not touch your face or eyes during the disinfection process
- 2. Prepare the disinfectant (approved by the Ministry of Environment)
  - \* Example: sodium hypochlorite (household bleach), 70% alcohol (used on surfaces where sodium hypochlorite is inappropriate, including metals), etc.

- **How to dilute sodium hypochlorite**

- Dilution ratio: 0.1% or 1000 ppm
- Dilution method (example): when diluting 5% bleach 1:50, use 1,000 mL of water and 20 mL of 5% bleach
- Disinfectant contact time: at least 10 minutes for nonporous surfaces; 30 minutes when submerging items into the disinfectant solution

3. Open windows for ventilation
4. Disinfect the floor of the disinfection area end-to-end with the prepared disinfectant several times
5. Wet a cloth (towel) with the disinfectant and use it to disinfect all surfaces that are frequently used, including the toilet
  - \* Handles, arm rests, tables, chairs, keyboards, mouse, switches, blinds, windows, walls, etc.
6. Clean bed sheets, pillow cases, blankets, etc. in laundry machine with laundry detergent
7. Do not use items used by the COVID-19 patient, including mattresses, pillows, carpets, cushions, etc. until test results are back
  - \* If the test result is positive, either discard or disinfect items; if test result is negative, start using them again
8. Place all cloths and towels used for disinfection, and trash resulting from disinfection in a plastic bag dedicated for these items
9. Take off gloves and wash hands with water
10. Take off medical-grade mask and wash hands with water
11. Place the gloves and the mask in the designated waste bag
12. Discard all waste resulting from the disinfection process separately from general household waste
13. As soon as disinfection is done, take a shower and change clothes
14. Ventilate the disinfected area

#### Q5. Can pets (including cats and dogs) infect humans?

- Much is still unknown about the transmission of COVID-19. So far, there are no cases reported where anyone has been infected from pets like cats and dogs.
- ❖ Source: WHO, Q&A on coronaviruses (COVID-19)

#### Q6. What about children, dialysis patients and other special cases not included in this guideline?

- Matters regarding clinical diagnosis should follow clinical guidelines provided by relevant academic societies, except for administrative matters described in this guideline
- ❖ Source: COVID-19 Response Guidelines [renal replacement therapy centers], [newborns, infants, pediatric patients], [critically ill patients], [Department of anesthesiology and pain medicine], etc.

## Disclaimer

The original document was developed by the South Korean government and has been translated from Korean to English by a group of volunteers listed below.

## Contributors

Alexander Bae

Anisa Khalifa

Ashley Eom

Dahyun Kim

Doyeun Kim

Edward Kim

Eileen Yoon

Grace Y. Kim

Hannah Bae

Hyewon Kim

Inhwan Bae

Jaeyong Jung

James Choi

Jin Hee Kim

Jooahn Park

Joohee Kim

Jun Hyuk Choi

Jun Soo (Ben) Yoon

Jung-Eun June Ha

Jungho Son

Jungmin Hwang

Michael Yoon

Michelle (So Young) Park

Minjee Kim

Ruby Kwak

Sa Do (John) Kang

Sang Woo Park

Sebastian Seung

Sehyo Yune

Seonryul Park

SeungJu Jackie Oh

So Hyun Rhee

SunJung Lee

Sunny (Jungyeon) Lee

Swan Lee

Taeun Kwon

Yoojin Chung

Youhan Kim