
COVID-19 Guidelines: Pediatric Care

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The Korean Society of Pediatric Infection Diseases



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Table of Contents

I. Childbirth and Newborn Care	3
1. Childbirth Care.....	3
2. Newborn Care After Birth.....	3
3. Release from Isolation	4
4. Confirmed Newborn Care	6
II. Child and Adolescent Care	7
1. Overview	8
2. Response Guideline	10
III. Guideline for Confirmed Pediatric Patient Care	14
1. Summary.....	15
2. Hospitalization and Severity for Confirmed Pediatric Patients	16
3. Determination of Discharge for Confirmed Pediatric Patients	17
Appendix 1. Guidelines for Specimen Collection	20
Appendix 2. Guidelines for Home-Quarantined Persons	23
Appendix 3. Practices for COVID-19 Healthcare Facilities	24
Appendix 4. Frequently Asked Questions	29

I. Childbirth and Newborn Care

* The Korean Society of Pediatric Infection Diseases, '20.3.2

1. Childbirth Care

1) Develop a birth plan: Childbirth of pregnant patients with confirmed COVID-19 or pregnant persons under investigation (PUI) should be notified to obstetricians and pediatricians and planned in terms of infection control and newborn care:

- Clinical assessment of the confirmed/suspected pregnant woman;
- Decision on childbirth methods;
- Prior arrangement regarding breastfeeding, contact between mother and baby, a designation of a primary caregiver after the newborn is discharged, etc.

2) Infection control: Establish infection control strategies by securing isolated rooms for hospitalization and delivery and checking all equipment for procedures.

- Secure an isolated patient room (a negative pressure room).
- Prepare a delivery/operating room. (Newborn care is not specific to any method of delivery.)
- Clear the transferring route from the entrance of the hospital and the patient room to the delivery room. (Restrict access and disinfect the path after the transfer.)
- Check medical equipment such as ultrasonography and fetal monitoring devices.
- Disinfect equipment after each use and use disposable tools wherever possible.
- Personal Protective Equipment (PPE): KF94, N95, or equivalent, goggles or face shield, a disposable waterproof long-sleeved gown, gloves.

3) Transfer of newborn

- A newborn born to a confirmed/suspected mother is presumed a suspected patient until the COVID-19 test result is confirmed.
- Predetermine the route with the least exposure and use transport incubators from a delivery/operating room to a negative pressure isolation room.

2. Newborn Care After Birth

1) Isolation

- Regardless of incubator care, isolate the newborn in a negative pressure room within the Neonatal Intensive Care Unit (NICU).
- If a negative pressure room is not available, isolate in a single-patient room within NICU.

2) COVID-19 testing for newborns

- Conduct a COVID-19 test with samples collected from nasopharynx and oropharynx immediately after admission to NICU.
- If the test result of a newborn born to a confirmed mother is negative at birth, conduct a second test after 48 hours from birth.
- To check for a potential intrauterine vertical transmission, conduct a COVID-19 test with a sample collected from placenta, cord blood, or amniotic fluid in a delivery/operating room.

3) Newborn care

- Wear appropriate personal protective equipment during procedures.
- ❖ Personal Protective Equipment (PPE): KF94, N95, or equivalent, goggles or face shield, a disposable waterproof long-sleeved gown, gloves.
- Observe any development of COVID-19-related symptoms (fever, dyspnea, respiratory symptoms, etc.)
- Based on the COVID-19 test result of the newborn, decide whether to continue hospitalization or to release isolation.
- Use disposable baby bottles if available and discard used linens according to the Special Protocol for Safe Management of Medical Waste.

4) Breastfeeding

- If a pregnant woman is confirmed with COVID-19 or under investigation, breastfeeding is not recommended. When the test result of the pregnant woman is negative, breastfeeding is recommended.
- If a sample from the breast milk of the mother tested is negative, breastfeeding can be considered. However, if a mother and a newborn are separately isolated, direct breastfeeding is not recommended. Instead, breast milk should be collected using a breast pump, stored frozen until the test result is out, and used after defrosting.
- Provide the hand hygiene education and ensure compliance when using a breast pump.
- If a mother insists on direct breastfeeding, ensure a mother wears a KF94, N95, or equivalent mask.

3. Release from Isolation

1) Newborns born to a confirmed mother with COVID-19

- When the COVID-19 test at birth is negative: Isolation can be released if the second test after 48 hours after birth is negative (final-negative).
- However, contact with the mother depends on whether the mother meets the criteria for isolation release.

- When the COVID-19 test at birth is positive: Isolation can be released if the criteria below are met:
 - (Symptomatic newborns) Clinical improvement* and two negative results from PCR tests taken 24 hours apart;
 - ❖ Clinical improvement: when fever is alleviated (body temperature below 37.5°C for 48 hours or more) and respiratory symptoms are improved; when the progress of COVID-19 does not get worse or improves if initial symptoms were mild without fever.
 - (Asymptomatic newborns) Two negative results from PCR tests taken 24 hours apart at least after 7 days.
- * Refer to [**Section III – Subsection 2. Determination of Discharge for Confirmed Pediatric Patients**] in this document.

2) Newborns born to a mother who had been suspected but tested negative

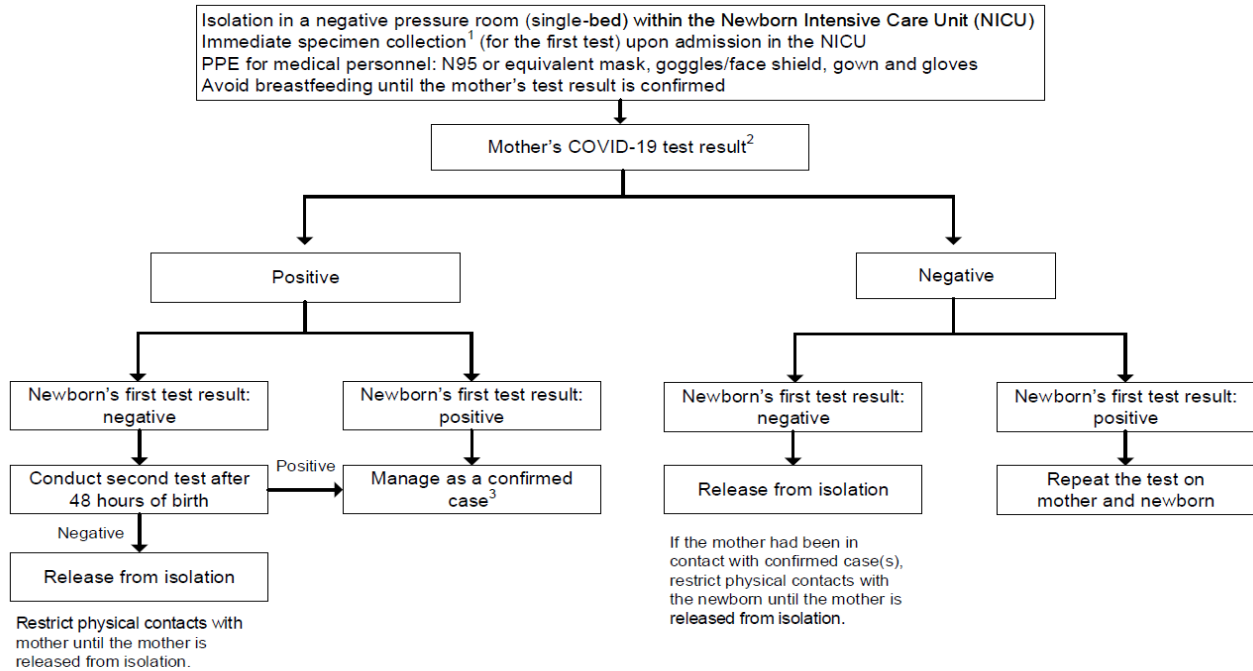
- When the COVID-19 test at birth is negative: Isolation can be immediately released (final-negative). However, if the mother has been in close contact with a confirmed case, contact with the newborn should be restricted until the isolation of the mother is released.
- When the COVID-19 test at birth is positive: Re-test both the mother and the newborn.

3) If the newborn is proved final-negative and not required further hospitalization, discharge the baby as soon as possible.

4. Confirmed Newborn Care

For care and treatment of confirmed newborns with COVID-19, refer to [Section III. Guideline for Confirmed Pediatric Patient Care] in this document.

Guidance on Newborns Born to Mothers with Suspected or Confirmed COVID-19



¹Collect nasopharynx and oropharynx swabs. Cord blood or amniotic fluid may be used for testing potential vertical transmission.

² Assume the result is positive until confirmed.

³ In accordance with the COVID-19 Response Guidelines for Newborns, Infants, Children and Adolescents

II. Child and Adolescent Care

* The Korean Society of Pediatric Infection Diseases, '20.3.4

- Infectious respiratory diseases in children and adolescents are distinguished from ones in adults.
 - The prevalence in children and adolescents is higher than in other age groups. These diseases are often caused by various pathogens such as other viruses and Mycoplasma apart from SARS-CoV-2(the pathogen of COVID-19).
 - Respiratory infection manifests various forms of diseases, including laryngitis, bronchiolitis, and severe pneumonia. Symptoms may vary and are not specific to a diagnosis.
 - Therefore, initial symptoms such as fever, cough, dyspnea in children and adolescents, unlike in adults, cannot differentiate COVID-19 from other respiratory diseases.
- According to domestic and international COVID-19 data, the incidence of pediatric patients is lower than of adults. Also, the severity of the disease is relatively mild in children and adolescents.
 - Acute viral respiratory diseases with mild symptoms are likely to recover without treatment. Most viral diseases, including COVID-19, do not have a disease-specific medicine.
 - Therefore, it is advised that pediatric patients with mild symptoms are cared for at home and isolated from others and those with severe symptoms should receive treatments as per the guidelines below.
 - This guideline includes recommendations for admission, discharge and aftercare of confirmed pediatric patients. It should be used in conjunction with a resource plan for optimizing the use of limited social resources.
- In healthcare facilities, medical consultations and performances regarding COVID-19 should take precautions and notifiable cases into consideration.
- ❖ Case definition, incubation period, procedures, etc. are to be updated according to future occurrences and results of epidemiological investigations.

1. Overview

1) Precautions during medical consultations with pediatric patients

- Identify guardians, primary caregiver, and cohabitants.
- If guardians, primary caregivers, or cohabitants of the pediatric patient develop COVID-19 symptoms within 14 days of visiting an area with regional spread of COVID-19 or contacting a confirmed case, they must be investigated at a COVID-19 Screening Center.
- If they were already tested but do not know the result yet, the pediatric patient should be tested as well.

2) Types of clinics

- COVID-19 Screening Center: a designated site for investigating and testing epidemiologically related cases (e.g., a visit to areas with regional spread of COVID-19, contact with a confirmed patient).
- Public Relief Hospital: a designated site for investigating and testing patients with fever or respiratory diseases.
- ❖ In the absence of a designated Public Relief Hospital, follow the regulations of individual healthcare facilities.

3) Case definition and management for pediatric patients

Case	Adapted Definitions	Management	Criteria for isolation release (updated on 3.20)
Confirmed Case	<p>A person whose infection with a pathogen has been confirmed in accordance with laboratory criteria, regardless of clinical condition</p> <p>❖ Diagnostic test: COVID-19 gene (PCR) test, isolation of the virus</p>	Refer to “Step-by-step bed allocation plan”	Refer to [Section III. Guideline for Confirmed Pediatric Patient Care] in this document.
Case	Adapted Definitions	Management	When pediatric case tested negative
Suspected Case	<p>A person who, after contact with a confirmed case during the confirmed case’s symptomatic period, within 14 days of the contact, develops a fever (37.5°C or higher) or respiratory symptoms (e.g., coughing,</p>	<ul style="list-style-type: none"> - Specimen collection: COVID-19 Screening Centers - Mild: Home isolation - In need of inpatient 	Even if the patient has improved and is discharged, isolation should continue for 14 days from the last contact with a confirmed patient.

	<p>shortness of breath, etc.).</p> <p>During the epidemiological investigation of pediatric patients, determine the range of additional subjects.</p>	<p>treatment: Refer to “Step-by-step bed allocation plan”</p> <ul style="list-style-type: none"> - Cost support available 	
Patient Under Investigation (PUI)	<p>A person who, according to a physician’s judgment, is suspected of COVID-19 or of pneumonia of unknown etiology.</p> <p>Even though pediatric patients with acute respiratory disease have a fever, they can be excluded if the cause of fever is not due to respiratory infection.</p>	<ul style="list-style-type: none"> - Specimen collection: COVID-19 Screening Centers or Designated Public Relief Center (test enabled) <p>Managing authority: Healthcare facilities</p> <ul style="list-style-type: none"> - Health education - Testing cost support 	Health education until symptoms are alleviated

❖ Respiratory Symptoms: Fever or respiratory symptoms (e.g., coughing, shortness of breath, etc.) within 14 days

Case	Adapted Definitions	Management	When pediatric case tested negative
Patient Under Investigation (PUI)	<p>A person who develops fever (37.5°C or higher) or respiratory symptoms (e.g., coughing, shortness of breath, etc.) within 14 days of visiting a country with regional spread* of COVID-19 such as China (including Hong Kong and Macau)</p> <p>* Refer to the country classifications on the WHO website (local transmission)</p>	<ul style="list-style-type: none"> - Specimen collection: COVID-19 Screening Centers or Designated Public Relief Center (test enabled) - Managing authority: Healthcare facilities - Health education 	Health education until symptoms are alleviated
	<p>A person with an epidemiological association with a domestic cluster of COVID-19, and who develops a fever (37.5°C or higher) or respiratory symptoms (e.g., coughing, shortness of breath, etc.) within 14 days</p>	<ul style="list-style-type: none"> - Testing cost support 	

2. Response Guideline

In general, follow the general guidelines underlined by “**COVID-19 Notice for Health Facilities** (Feb 20).” In particular, select the appropriate patient classification such as ‘Suspected Case’ in the Notes Section (Special Remarks) of the Form 1: Infectious Disease Reporting Form in “**Coronavirus Disease 2019 Response Guidelines for Local Governments.**”

1) Bed Allocation and Transfers

- When a confirmed/suspected patient requires inpatient treatment,
 - Transfer the patient to a nationally designated hospital or a negative pressure isolation room within a regional healthcare facility.
 - Suspected (confirmed) patients must wear a surgical mask at all times throughout the transfer.
 - Patient porters must wear appropriate Personal Protective Equipment (PPE).
 - An accompanied caregiver(guardian) should wear KF94, N95, or equivalent, a full-body protective suit or a waterproof long-sleeved gown, gloves, or goggles.
- Pediatric PUI in need of inpatient treatment is admitted into a negative pressure room or a single patient room (en-suite).
- * Refer to “**Coronavirus Disease 2019 Response Guidelines for Local Governments, Edition 7-3 (2020.3.15.)**” and [Section III. Guideline for Confirmed Pediatric Patient Care] in this document.

2) Measures for guardians accompanying pediatric patients during their isolated hospitalization

- When a confirmed/suspected pediatric patient or a pediatric PUI needs inpatient treatment,
 - During transfer (before admission), inform the accompanying caregivers about the potential risk of contracting COVID-19 from the patient and obtain a written consent for the accompanied admission.
 - (Accompanying the confirmed pediatric patients) The caregiver should wear KF94, N95, or equivalent, a full-body protective suit, gloves, or goggles
 - (Accompanying the suspected pediatric patients or pediatric PUI) the caregiver should wear the least PPE (KF94, N95, or equivalent, a waterproof long-sleeved gown, gloves, or goggles).
 - Ensure frequent handwashing.
- If the accompanied caregiver has a fever or respiratory symptoms, immediately conduct the COVID-19 test.
- The caregiver should self-isolate* for 14 days from the end date of the pediatric patient’ isolation

- Test the caregiver on the 13th day of their isolation, and end isolation after 14 days if the test result is negative.
 - (example) If the last contact was on April 1st, isolation can end on April 16th (after the 14th day)
 - * Refer to [**Section III. Guideline for Confirmed Pediatric Patient Care**] in this document.
- Criteria for releasing confirmed pediatric patients from isolation
 - Apply the standard criteria for releasing confirmed cases from isolation
 - Criteria for release from isolation must meet clinical and laboratory criteria
 - (Clinical criteria) Not taking antipyretics, no fever and improvement of clinical symptoms
 - (Laboratory criteria) Two negative results from PCR tests taken 24 hours apart
 If clinical criteria are met, the patient can be discharged from the hospital, even if laboratory criteria have not been met. The discharged patient can be released from isolation, if examination criteria are met.
 - Criteria for isolation release of pediatric patients in need of a caregiver
 - * Refer to [**Section III - 2. Determination of Discharge for Confirmed Pediatric Patients**] in this document.

3) Laboratory Testing Management

- (Type of specimen): Collect upper respiratory tract specimen (oropharyngeal and nasopharyngeal swab) or lower respiratory tract specimen.
- (Collection of Lower Respiratory Tract)
 - Collect specimen only from patients producing sputum or coughing.
 - Do not induce sputum (may generate aerosol)
 - If sputum collection is required, collect a sample in a negative pressure (collection) room.
- Nasopharyngeal swab is allowed in case of non-cooperative patients.
 - Collect specimen at an isolated collection site (not necessary at a negative pressure room)
 - * Refer to [**Appendix 1. Guidelines for Specimen Collection**] in this document.

4) Guidelines for Home-Quarantined Children and Adolescents

- In case of children and adolescents who cannot take care of themselves, designate one caregiver and isolate from other cohabitants in order to minimize the transmission of the disease.
- The designated caregiver should avoid contacting or conversing with other family members or cohabitants.
- * Refer to [**Appendix 2. Guidelines for Home-Quarantined Persons**] in this document.

5) Health worker with Personal Protective Equipment

- When performing medical procedures on suspected patients: Level D protection; KF94, N95, or equivalent, a full-body protective suit or a waterproof long-sleeved gown, gloves, goggles or face shield
- When performing medical procedures on patients with general fever or respiratory symptoms (cough, dyspnea, etc.): KF94, N95, or equivalent, a waterproof long-sleeved gown, gloves, goggles or face shield
- * Refer to [**Appendix 3. Practices for COVID-19 Healthcare Facilities (PPEs)**] in this document.

6) Health Education

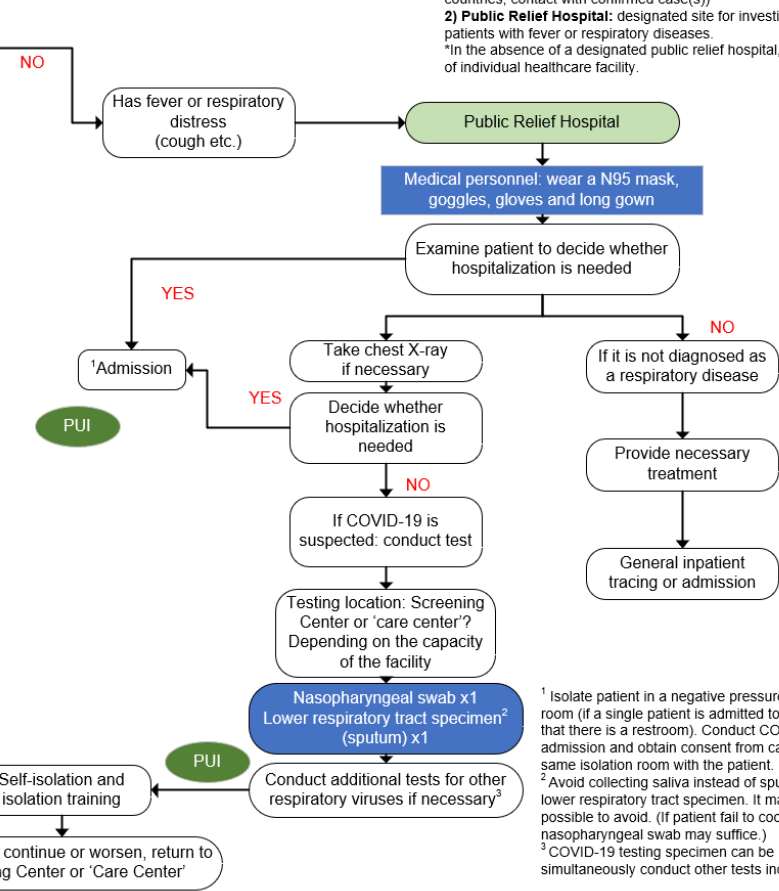
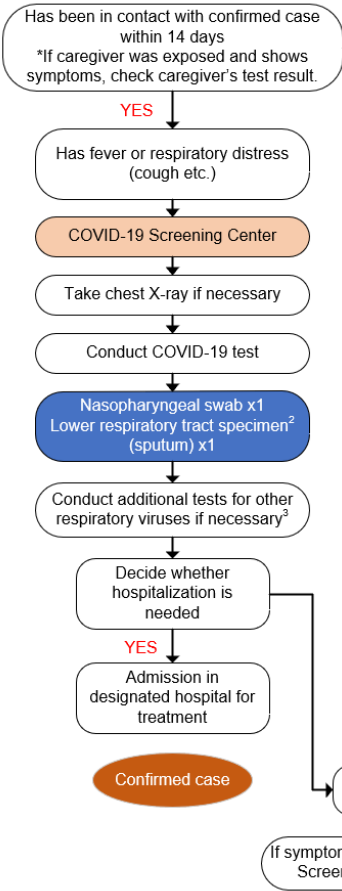
- **(Don'ts)** Going out, being in close contact with others including dining together, use of public transportation, use of public facilities.
- **(Do's)** Wear a mask to prevent respiratory infections, emphasize hand washing, observe cough etiquette, disclose pertinent personal information such as history of overseas travel and contact with patients when visiting a healthcare facility.
- If symptoms occur or worsen, contact the Center for Disease Control and Prevention (☎️ 1339, area code + 120) or a public health center.

7) Newborns born to the confirmed/suspected mother with COVID-19

- Develop a plan with obstetricians and pediatricians regarding isolation of the mother, childbirth, newborn care.
- Transfer newborns to an isolation room in NICU using transport incubators.
- Patient porters must wear appropriate Personal Protective Equipment (PPE).
 - KF94, N95, or equivalent, a full-body protective suit or a disposable waterproof long-sleeved gown, gloves, goggles or face shield
- * Refer to [**Section I. Childbirth and Newborn Care**] in this document.

COVID-19 Response Pathway for Children and Adolescents

Patient, caregiver: wear a mask



Types of clinics:
 1) **COVID-19 Screening Center:** a designated site for investigating and testing epidemiologically related cases (e.g. visit to COVID-19 affected countries, contact with confirmed case(s))
 2) **Public Relief Hospital:** designated site for investigating and testing patients with fever or respiratory diseases.
 *In the absence of a designated public relief hospital, follow the regulations of individual healthcare facility.

¹ Isolate patient in a negative pressure room or a single room (if a single patient is admitted to a larger room, ensure that there is a restroom). Conduct COVID-19 test following admission and obtain consent from caregiver to stay in the same isolation room with the patient.
² Avoid collecting saliva instead of sputum when collecting lower respiratory tract specimen. It may be omitted if not possible to avoid. (If patient fail to cooperate, nasopharyngeal swab may suffice.)
³ COVID-19 testing specimen can be used to simultaneously conduct other tests including influenza tests.

III. Guideline for Confirmed Pediatric Patient Care

* The Korean Society of Pediatric Infection Diseases, '20.3.2

- KSPID considers that the incidence and the severity of COVID-19 in children and adolescents are not high yet. However, we are keeping an eye on domestic and international reports acknowledging the fact that the outbreak began only three months ago, and we have limited information regarding the progress and acquired immunity.
- KSPID established the principles below based on domestic and international data until February 2020 and proposes them to minimize the infection amongst children and adolescents:
 - 1) Minimize the chance of contact with confirmed patients
 - 2) Avoid social gatherings if an individual has an acute respiratory disease
 - 3) Prevent transmission to the high-risk groups
- This guideline includes recommendations for admission, discharge and aftercare of confirmed pediatric patients. It should be used in conjunction with a resource plan for optimizing the use of limited social resources.
- This edition has been revised (2020.3.18.) on the basis that the likelihood of the outbreak worsening as a result of reinfection or transmission via recovered patients is low. The guideline has been reviewed to support an efficient use of medical resources and the society's recovery from COVID-19.

In healthcare facilities, medical consultations and performances regarding COVID-19 should take precautions and notifiable cases into consideration.

- ❖ Case definition, incubation period, procedures, etc. are to be updated according to future occurrences and results of epidemiological investigations.

1. Summary

Severity	Admission	Discharge from an isolated patient room	Aftercare	Criteria for isolation release ³
Mild	Home isolation ¹		If the criteria for isolation release are not met, isolation should be remained at home, regionally designated residential treatment centers, or regionally designated health facilities	<ul style="list-style-type: none"> Clinical improvement* and two negative results from PCR tests taken 24 hours apart In case of asymptomatic confirmed patients, two negative results from PCR tests taken 24 hours apart at least after 7 days
Severe	Inpatient treatment ²	<u>Clinical improvement</u>		

❖ Clinical improvement: when fever is alleviated (body temperature less than 37.5°C for 48 hours or more) and respiratory symptoms are significantly improved; when the progress of symptoms does not worsen or improves for the patient whose initial symptoms were mild without fever.

- 1) If home isolation is not possible, isolate in a negative pressure room at a designated health facility where pediatric care is available.
- 2) Isolate in a negative pressure room at a designated health facility where pediatric intensive care is available.
- 3) If a patient and a guardian were isolated together, the guardian must be tested on the 13th day from the date of the patient's release from isolation, and end isolation after 14 days if the test result is negative.

❖ Secure regionally designated residential treatment centers or healthcare facilities where effective care can be provided to confirmed patients with mild symptoms or to those who had contacts with confirmed cases.

❖ Secure professional resources including pediatricians and infectious disease specialists to provide treatment, infection control, and intensive care to pediatric patients

❖ Follow national and regional resource plans to use designated health facilities.

Inpatient treatment takes place in health facilities with negative pressure rooms. The levels of facilities for use are as follows:

Level 1: Nationally designated inpatient beds;

Level 2: Regional healthcare facilities, designated hospitals for infectious diseases, public hospitals, local medical centers, military hospitals;

Level 3: General hospitals with negative pressure rooms.

2. Hospitalization and Severity for Confirmed Pediatric Patients

1) Assessing the severity of pediatric patients

- Mild
 - Slightly fast breathing but within the normal range of respiratory rate by age
 - None or mild chest retractions
 - No sign of dyspnea or equivalent symptoms such as nasal flaring
 - Normal oxygen saturation

**< Respiratory rate by age, based on score 0 (normal value) of
the Bedside Pediatric Early Warning System >**

Age	Respiratory Rate (breaths/min)
< 3 months	>29 or <61
3-11 months	>24 or <51
1-4 years	>19 or <41
5-12 years	>19 or <31
> 13 years	>11 or <17

- Severe: When one or more of the following symptoms are met (WHO/IDSA, severe pneumonia criteria)
 - Tachypnea (respiratory rate, breaths/min., age 0-2 mo. > 60; 2-12 mo. > 50; 1-5 yrs. > 40; > 5 yrs. > 20)
 - Dyspnea or equivalent symptoms such as nasal flaring
 - Apnea
 - Cyanosis
 - Prominent chest retractions
 - Altered mental status, lethargy or convulsion
 - Oxygen Saturation SpO₂ < 90%
 - Difficulties in breastfeeding or food intake, dehydration
- Possibility to develop into severe conditions
- If a confirmed pediatric patient manifests the symptoms below, admission to health facilities is advised in consideration of the high likelihood of developing into severe conditions
 - Infants under 3 months old
 - Chronic pulmonary disease (e.g., asthma, bronchopulmonary dysplasia, etc.)
 - Hemodynamically significant cardiac diseases
 - Immuno-depressed/-suppressed patients

- Chronic metabolic diseases
- Impaired respiratory function or secretion clearance, conditions to increase risk of aspiration (e.g., a premature baby, cognitive impairment, spinal cord injury, convulsive disease, neuromuscular disease, genetic abnormality, etc.)

2) Admission of asymptomatic or mild pediatric patients (consider the current status of regional bed allocation)

- If home isolation is not possible, isolate in a negative pressure room at a designated health facility where pediatric care is available.
- (Isolation in a healthcare facility is recommended because there is no evidence to predict the progress of the disease in its early stage and that the risk of transmission in the beginning stage is higher than in the recovery stage.)
- In case of children and adolescents who cannot take care of themselves, designate one caregiver during isolation.
- Monitor patient's condition regularly and conduct the COVID-19 PCR test until the patient is released from isolation.

[Assessment criteria and frequency]

- Evaluate patients, based on the severity assessment criteria, more than twice a day for at least one week after diagnosis.
- Once the patient is stable and clinically improved, conduct the test.
- Whenever symptoms get severe, admit or transfer to a healthcare facility where pediatric intensive care is available.

3) Admission of severe pediatric patients

- Isolate in a negative pressure room at a designated health facility where pediatric intensive care is available.

3. Determination of Discharge for Confirmed Pediatric Patients

1) Discharge from a negative pressure room in a designated healthcare facility

[Clinical improvement]

- The date of symptom (fever or respiratory symptoms by COVID-19) onset is considered as [day 0]
- Clinical improvement: when fever is alleviated (body temperature less than 37.5°C for 48

hours or more) and respiratory symptoms are prominently improved

- Remind patients and their guardian that discharge is distinguished from isolation release.
- If the criteria for isolation release are not met, patients and their guardian should be isolated even after discharge.

2) Evaluation of post-discharge isolation (quarantine) environment

- Evaluate whether appropriate isolation is feasible, in advance to planning the discharge.
- Designate one or more caregivers for the discharged pediatric patient if they need care during isolation.
- Changes made to the nomination of caregivers must be reported to the local public health center.
 - Regardless of symptoms, all caregivers should self-quarantine for at least 14 days after providing care.
 - Newly designated caregivers should be given appropriate instructions on contact and isolation of confirmed patients.
- A person at high risk (e.g., old age, pregnancy, underlying diseases) cannot be designated as the caregiver (guardian).
 - Local public health authorities provide childcare support for those with no suitable guardian.
- Check whether residential facilities and essential supplies are readily available for the patient.
- Check whether isolation from people other than the designated caregiver is possible
- Home, designated residential facilities, or regionally designated healthcare facilities can be used for isolation.

3) Clinical evaluation and criteria for isolation release after discharge criteria are met:

- Clinical evaluation should be done at least once a week after discharge criteria are met: body temperature, respiratory symptoms, food intake etc.
- Clinical evaluation applies to both the patient and the guardian.
- Isolation release is issued upon 2 negative PCR test results at a 24-hour interval.

<Standard Recommendation for Isolation Release (2020.3.18.)>

- Standard for discharge of confirmed patients: clinical improvement
- Standard for isolation release of confirmed patients
 - Symptomatic confirmed patients: Clinical improvement* and two negative results from PCR tests taken 24 hours apart

- Asymptomatic confirmed patients: Two negative results from PCR tests taken 24 hours apart after at least 7 days
 - ❖ Clinical improvement: when fever is alleviated (body temperature less than 37.5°C for 48 hours or more) and respiratory symptoms are improved; when the progress of symptoms does not worsen or improves for the patient with initial symptoms were mild without fever.
 - Isolation of the accompanied caregiver(guardian) can be released:
 - (If the caregiver was a confirmed patient): Follow the criteria for isolation release of confirmed patients.
 - (If the caregiver was not a confirmed patient): Test the caregiver on the 13th day from the day that isolation of the pediatric patient is released (the last day of contact). If the result is negative, then the caregiver can be released from quarantine after the 14th day.
 - Confirmed pediatric patients should strictly follow the general precautions for infection control* for two weeks, even after their isolation is released.
- * Refer to the [**Health Education**] subsection in [**Section II. Child and Adolescent Care**].

- If isolation takes place in designated hospitals, medical evaluation and tests are conducted in the hospital.
- If isolation takes place at home or in designated facilities, medical evaluation and tests are conducted by staff in the facility or designated personnel at the Public Health Center.
- When investigating confirmed patients or their close contacts and collecting samples, wear appropriate PPE.

Appendix 1

Guidelines for Specimen Collection

* Source: Coronavirus Disease 2019 Response Guidelines for Local Governments, Edition 7-3

1. Specimen Collection

1) Specimen Collection Site

- A COVID-19 Screening Center or an Isolated Specimen Collection Site within a medical facility separated from other areas
- ❖ However, in the case of home isolation, the specimen collection site may vary based on its location.

2) Specimen Type and Packaging

- Collect upper respiratory tract specimen (oropharyngeal and nasopharyngeal swab); if patient experiences cough or sputum, collect lower respiratory tract specimen.
- Patient with mild symptoms: request testing of upper respiratory tract specimens only.

No.	Type of specimen		Container/volume	Remarks
1	Upper Respiratory Tract	<ul style="list-style-type: none"> · Oropharyngeal swab · Nasopharyngeal swab 	<ul style="list-style-type: none"> · Container: Simultaneous collection of oropharyngeal and nasopharyngeal specimens in a single viral transport medium 	<ul style="list-style-type: none"> · Collect specimen only at isolated specimen collection site
2	Lower Respiratory Tract	<ul style="list-style-type: none"> · Sputum 	<ul style="list-style-type: none"> · Container: 50ml sterile tube · Volume: obtain 3ml or more 	<ul style="list-style-type: none"> · Collect specimen only from patients producing sputum · Do not induce sputum (may generate aerosol) · If sputum collection is required for accurate diagnosis, collect in a negative pressure room (if no negative pressure room is available, collect in isolated area with good external ventilation to avoid risk of aerosol generation and spread)

Required specimen: Upper respiratory tract specimen; **Optional specimen:** Lower respiratory tract specimen, blood specimen, etc.

- ❖ For confirmed cases: after initial positive testing result and before release from quarantine, collect additional specimens (blood; if possible, stool and urine also). Collect 5~10ml (1ml for infant patients) of blood specimens in SST (Serum Separator Tube). Collect fecal and urine specimens in sterilized containers.

* Source: CDC, 2019 Novel Coronavirus, Wuhan, China, Guidelines for Clinical Specimens, 2020.01.17 ver.

2. Personal Protective Equipment (PPE)

1) Precautions

- When collecting specimens, it is essential to wear Personal Protective Equipment (PPE) such as KF94, N95, or equivalent respiratory mask, disposable gloves, disposable long sleeve gown or full-body protective suit, goggles or face shield (if necessary, also wear disposable impervious medical apron) and disinfect oneself after the collection.

2) Usage rules

- When selecting Personal Protective Equipment (PPE), abide to standard precautions as well as precautions against respiratory droplets (and aerosols, depending on the exposure level).
 - Assess situation, work procedure and use for selecting appropriate Personal Protective Equipment.
 - After completing cleaning and disinfection, doff PPE carefully so as not to contaminate body or surroundings with infectious substances that could be on PPE; Wash hands with soap and water after doffing PPE.
 - Follow instructions for doffing personal protective equipment and be careful not to contaminate the surroundings; immediately discard PPE in medical waste containers.
 - Discard all used disposable PPE in healthcare waste container and seal tightly; follow waste disposal procedures.
 - Specimen Collection Site must be disinfected according to the related guide.*
- * Refer to “COVID-19 Guidelines: Hospital-level Healthcare Facilities” (KCDC).

Q1. **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.

Q2. **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.

Q3. **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

Appendix 2

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 3

Practices for COVID-19 Healthcare Facilities

(The Central Disease Control Headquarters, 2020. 02. 22)

- ❖ Case definition, incubation period, procedures, etc. are to be updated according to future occurrences and results of epidemiological investigations

1. Legal Basis

The coronavirus disease 2019 (COVID-19), which was first reported from Wuhan, Hubei, China, corresponds to Infectious Disease Control and Prevention Act of Republic of Korea Article 2, Subparagraph 2, Item "Class 1 infectious disease — emerging infectious disease syndrome" until further clinical and epidemiological details are revealed, and will be acted upon accordingly.

2. PPE Standards for Healthcare Facilities

- ❖ Healthcare facilities follow standard precautions/ transmission-based precaution for all patients

Setting	Activity	Recommended PPE standard	
		ICU patient	Emergency room patient
High-risk patient area 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 ¹⁾²⁾	① PPE including: - Mask: KF94, N95-equivalent or higher * - Goggles ⁴⁾ - Disposable, waterproof long-sleeve gown - Disposable gloves - Hat (optional) or ② Level D PPE	① PPE including: - Mask: KF94, N95-equivalent or higher * - Goggles ⁴⁾ - 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
General patient area	Regular patient care	- Surgical mask - Standard precautions or transmission-based precautions	- Surgical mask - Standard precautions or transmission-based precautions
	Aerosol-generating procedures ¹⁾³⁾⁵⁾	① PPE including: - Mask: KF94, N95-equivalent or higher * - Goggles ⁴⁾ - Disposable, waterproof long-sleeve gown - Disposable gloves	① PPE including: - Mask: KF94, N95-equivalent or higher * - Goggles ⁴⁾ - Disposable, waterproof long-sleeve gown - Disposable gloves

		- Hat (optional) or ② Level D PPE	- Hat (optional) or ② Level D PPE
	No patient contact	Surgical mask	Surgical mask
Area without patients	No patient contact	Surgical mask	Surgical mask

* Including PAPR (Powered Air Purifying Respirator)

1) Aerosol-generating procedures

- Aerosol-generating procedures which increase the transmission risk of respiratory infectious disease are endotracheal intubation, cardiopulmonary resuscitation, bronchoscopy, airway open suction (including tracheostomy care), autopsy and non-invasive positive airway pressure (BiPAP and CPAP).
- Acknowledging the controversy, limited evidence shows that procedures generating aerosol include high-frequency oscillatory ventilation, nebulizer therapy, or induced sputum examination.
- Nasopharyngeal aspiration (NPA) and high-flow oxygen have a risk of infectious droplet dispersion, so that, in high-risk patients' area, it should be performed following the condition for aerosol-generating procedures.
- Other procedures should be evaluated by the personnel who is in charge of the nosocomial infection control.

2) In high-risk patients' area, patients should be placed at an airborne infection isolation room before performing aerosol-generating procedures.

3) In general patients' area, patients should be placed at a room with good air ventilation before performing aerosol-generating procedures (e.g. at least 6 ventilation cycles per hour or use portable HEPA filter (e.g. IQ Air))

4) Eye should be protected by face shield or goggles

Patients should be checked for considerations on an operation bed after preoperative examination and sedation, and healthcare workers should follow the standard precautions/ transmission-based precaution when intubating for a planned operation.

3. Donning and Doffing PPE

* Source: Appendix 9 of COVID-19 Response Guideline for Local Governments, Edition 7-3)

1) 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

2) 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 N95 or 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	N95 equivalent respiratory protection equipment	Powered Air Purifying Respirator (PAPR) ¹
	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 ² 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
	5	Glove disinfection	Full body protective suit
	6	Goggles (or face shield)	Shoe covers (or boots)
	7	N95 equivalent respiratory protection	(Inner) Gloves

¹ Follow manufacturer instructions for putting on and taking off PAPR and tubing since it can be different for each product.

² 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.

		equipment	
	8	(Inner) Gloves	Hand hygiene
	9	Hand hygiene	-

Refer³ to **KCDC website** → **Notice/Resources** → **Promotional material** → **Videos** → **Donning/doffing of Level D PPE**

³ Translator's remark: instructions on donning/doffing Level D PPE are also found in "COVID-19 Guidelines: Hospital-level Healthcare Facilities," Appendix 1.

4. COVID-19 PPE recommendation by situation

Situation	PPE						
	Respiratory protection			Body protection			Eye protection
	Surgical mask	KF94, N95 or equivalent	Electronic respirator	Disposable gloves ⁴	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) ⁵		•		•			
Transport (quarantine officer, PHC personnel, EMT, etc.)		•		•		•	•
Ambulance disinfection		•		•		•	•
Suspected patient care: entering room, evaluation, nursing		•		•	•		•
Aerosol-inducing procedures ⁶			•	•	•		•
Examination: X-ray and other imaging			•	•	•		•
Respiratory specimen collection			•	•	•		•
Specimen handling (laboratory, etc.) ⁷		•	•	•	•		•
Specimen transport (in intact package)				•			
Dead body transport		•		•		•	
Patient room cleaning and disinfection		•		•	•		•
Healthcare waste disposal and handling		•		•	•		•
Healthcare waste transport	•			•	•		

* Source: Coronavirus Disease 2019 Response Guidelines for Local Governments (Edition 7-3), KCDC, 2020

⁴ Double glove while examining, treating, nursing, testing, or cleaning around confirmed (or suspected) patients to mitigate the risk of exposure from glove perforation.

⁵ 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.

⁶ Aerosol-inducing procedures refer to endotracheal intubation, CPR, bronchoscopy, tracheostomy care, autopsy, continuous positive airway pressure (CPAP) therapy, nebulizer therapy and other procedures for expectoration.

⁷ In specimen-handling labs or exam rooms, refer to guidelines from the KCDC Biological Safety Board for PPE choice, use, and maintenance.

⁸ If working in Class II biological safety cabinet (BSC), wear a long-sleeved gown and disposable gloves.

Lee H, Ki C-S, Sung H, et al. Guidelines for the Laboratory Diagnosis of Middle East Respiratory Syndrome Coronavirus in Korea. Infection & chemotherapy. 2016;48(1):61-69.)

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

Newborn and Childbirth Care FAQ

Q1. How does COVID-19 affect pregnancy?

To date, there are no reports on the effects of COVID-19 on the final outcome of pregnancy. Regarding other coronavirus diseases such as SARS-CoV or MERS-CoV, there were rare incidences of pregnancy that resulted in a miscarriage or stillbirth.

Q2. Can confirmed pregnant people transmit the virus during pregnancy or after birth to a newborn?

COVID-19 transmission is apparent in the form of direct contact with respiratory droplets or indirect contact through fomites. It is not known yet whether intrauterine vertical transmission or other transmission before/during/after delivery to a newborn is a possibility. Based on the reported cases to date, the risk of intrauterine vertical transmission of COVID-19 seems extremely low.

Q3. Are newborns of a confirmed mother more susceptible to COVID-19 risks?

Although there are few cases that confirmed pregnant women had delivered a premature baby, there is no evidence of a direct relationship between the mother's infection and the premature birth. There is also no report that indicates an additional risk of newborns born to a mother confirmed positive. However, considering the known effects of other respiratory viruses (such as influenza) on premature or underweight births, we cannot overlook the risk of COVID-19 on newborns.

Q4. Is there a risk of a long-term effect of COVID-19 in the mother or the child on the infantile growth and health?

At present, there is no information on the long-term impact of COVID-19 on newborns with intrauterine exposure or confirmed. In general, however, premature or underweight births do have an adverse implication to the child's health in the long term.

Q5. Is there a risk of COVID-19 infection through breastfeeding?

In limited studies, no case is reported that COVID-19 was detected in breast milk; however, we do not know for sure whether mothers with COVID-19 can spread the virus via breast milk.

Q6. Can mothers with COVID-19 room in with the newborn?

A COVID-19 confirmed mother should avoid contact with the newborn until release from isolation or quarantine. If contact is absolutely essential, there should be a curtain or a distance of more than 2 meters between the mother and child.

Q7. Can a COVID-19 suspected mother freeze and store expressed breast milk when direct breastfeeding is limited?

If an unconfirmed case or classified a close contact to a confirmed patient, the mother can continue to express and store breast milk. If the mother tests negative and is released from quarantine, the expressed breast milk can be fed to the baby. If feeding 4 or more days after expressing, the milk should be kept under -18°C in a freezer.

Reference

1. (Korean) KCDC. Prevention and Management of Coronavirus Disease 2019. (2020.2.11)
2. Centers for Disease Control and Prevention. Inpatient obstetric healthcare guidance. <https://www.cdc.gov/coronavirus/2019-ncov/hcp/inpatient-obstetric-healthcare-guidance.html>. Updated 2020. Accessed March 2, 2020.
3. Schwartz DA, Graham AL. Potential maternal and infant outcomes from coronavirus 2019-nCoV (SARS-CoV-2) infecting pregnant women: Lessons from SARS, MERS, and other human coronavirus infections. *Viruses* 2020, 12, 194.
4. Chen H, Guo J, Wang C, et al. Clinical characteristics and intrauterine vertical transmission potential of COVID-19 infection in nine pregnant women: a retrospective review of medical records. *Lancet*. Forthcoming 2020.
5. Working Group for the Prevention and Control of Neonatal 2019-nCoV Infection in the Perinatal Period of the Editorial Committee of Chinese Journal of Contemporary Pediatrics. Perinatal and neonatal management plan for prevention and control of 2019 novel coronavirus infection (1st Edition). *Zhongguo Dang Dai Er Ke Za Zhi* 2020;22:87–90.
6. Pediatric Committee, Medical Association of Chinese People's Liberation Army, Editorial Committee of Chinese Journal of Contemporary Pediatrics. Emergency response plan for the neonatal intensive care unit during epidemic of 2019 novel coronavirus. *Zhongguo Dang Dai Er Ke Za Zhi* 2020;22:91–95.
7. Japan Society for Neonatal Health and Development. Newborn coronavirus infection in early postnatal neonates second report. <http://jsnhd.or.jp/pdf/20200228COVID-19%202nd.pdf>. Updated 2020. Accessed March 2, 2020.
8. Rasmussen SA, Smulian JC, Lednicky JA. Coronavirus Disease 2019 (COVID-19) and Pregnancy: What obstetricians need to know. *Am J Obstet Gynecol*. Forthcoming 2020.
9. Centers for Disease Control and Prevention. Frequently asked questions and answers: Coronavirus disease 2019 (COVID-19) and pregnancy. <https://www.cdc.gov/coronavirus/2019-ncov/specific-groups/pregnancy-faq.html>. Updated 2020.
10. Lee H, Ki C-S, Sung H, et al. Guidelines for the Laboratory Diagnosis of Middle East Respiratory Syndrome Coronavirus in Korea. *Infection & chemotherapy*. 2016;48(1):61-69.) Accessed March 2, 2020.

Infant and Pediatric Care FAQ

Q1. What are the symptoms related to COVID-19 for infants and children, and what should guardians look out for?

Symptoms of COVID-19, as an acute respiratory disease, can range from having mild or no symptoms to serious respiratory distress (dyspnea). Based on the diagnosed infantile cases up to date, most infant cases tend to exhibit relatively mild symptoms. However, there is relatively higher risk of developing to severe conditions for babies, or infants and children with premature birth history, chronic respiratory disease, congenital heart disease, congenital immunodeficiency or cancer. During quarantine of a confirmed infant, guardians should look for any abnormal breathing, any difficulties during breastfeeding, unwillingness to eat, stretched or blue lips (cyanosis), or fever. For any of the above, contact the health authorities to get treated by a medical staff.

Q2. Should COVID-19 confirmed infants also wear masks?

Transmission of COVID-19 is usually through respiratory droplets from the confirmed infants' coughs or sneezes, either directly or indirectly in the form of fomites on the hand or eyes. It is therefore necessary that the child wear a mask to prevent further transmission of the virus. However, it is almost impossible for a child to keep wearing the mask in the correct form, there should be an adult supervisor who attends the child with strict hygiene measures and appropriate PPEs.

Q3. What protective equipment should be worn for caregivers of quarantined and confirmed infants?

If the caregiver isolated with the pediatric patient together is also confirmed positive, then no protective equipment is necessary. However, if the caregiver is not a confirmed patient, then PPEs are necessary to avoid risk of further transmission. If in direct contact with the child, caregivers should wear medical-grade masks and gloves, as well as a long-sleeve waterproof gown to protect from the secretions and excrements.

Q4. What provision is given to infants both of whose parents are confirmed with COVID-19?

The child had very close contact with the parents and should therefore be tested for COVID-19. If the test is negative, the child should be isolated from the parents and closely monitored of any symptoms for 14 days from parental contact. If any symptom is detected,

contact the public health authority as medical care is absolutely necessary.

Q5. Upon isolation release of a COVID-19 confirmed child, the caregiver to the child should be quarantined for a further 14 days from the release. Can the caregiver remain with the child during this period?

For standard respiratory infectious diseases, a recovered child is judged to have formed immunity to the disease; thus, the risk of reinfection to COVID-19 can be considered low. However, the epidemiological details of COVID-19 are not yet fully known, so standard precautions should be strictly enforced when giving child care.

Q6. What are the procedures for breastfeeding when either the mother or the child is confirmed with COVID-19?

Breastfeeding a confirmed infant is allowed. If the mother is also confirmed, direct breastfeeding is also allowed. However, if the mother is not infected, then she must wear Personal Protective Equipments (PPEs) during breastfeeding. If the mother is not infected, direct breastfeeding with PPEs such as long-sleeve waterproof gowns is difficult so we recommend expressing breast milk. On the other hand, if the child is uninfected while the mother is infected, then we recommend avoiding breastfeeding as the exact nature of COVID-19 transmission through breastfeeding is yet to be known. Always keep high hygiene standards for hands while breastfeeding.

Q7. How should I feed COVID-19 confirmed infants with milk formula or other food (for baby-led weaning)?

- For baby formula, we recommend using the bottled liquid formula sold in stores or disposable baby bottles and disposing of them after first use. If using regular bottles, separate the milk bottle with other utensils and wash with detergents and warm water.
- For baby-led weaning, use the products sold in stores or cook at home and store each serving in different containers, disposing of any residue from each meal. All utensils used by the baby should be separated and cleaned with detergents and warm water, so that other people do not use them. All food wastes from this process should be considered and processed as healthcare wastes.

Q8. How should I process used diapers from a COVID-19 confirmed infant under quarantine?

Coronavirus is known to be excreted through feces or urine. However, it is not yet known whether COVID-19 can be transmitted to other people via such excrements. When the

caregiver changes and disposes the diaper, PPEs should be worn, and hand hygiene standards should be strictly kept. The used diapers are processed as healthcare wastes. Use the designated healthcare waste bag issued by public health authorities, by first disinfecting the inside of the bag and then placing the diaper, then disinfecting again, sealing and storing in the designated plastic container. Disinfect the inside of the container and shut the lid, and the container will be collected by the authorities.

Q9. How do I take care of the toys used by a COVID-19 confirmed infant?

Coronavirus can remain on the surface of the toy for hours. Keep the use of toys to a minimum during quarantine, and do not let other persons touch them. Used toys should be thrown away as healthcare wastes or disinfected with alcohol or sodium hypochlorite (“bleach”, 500 ppm recommended)** and washed thoroughly before use so there is no bleach residue.

Q10. Can I reuse clothes and beddings of a COVID-19 confirmed infant?

Infants should frequently replace clothes and beddings (sheets, pillow covers, duvet, blankets, etc.) as they have nasal and oral secretion more frequent than adults. For washable garments, use detergents and disinfectants to wash and reuse. For garments that can be warm-washed, wash at 70°C for 25 minutes or longer with detergents and disinfectants. For garments difficult to wash, such as mattresses and carpets, consult a professional sterilization service for a steam (high temperature) or other means to appropriate disinfection. Depending on the amount of garments used by the infant, choose whether to wash or to throw away as a healthcare waste.

Q11. How should I bathe a COVID-19 confirmed infant?

If the caregiver is not infected, PPEs must be worn. The bathing area should be disinfected by cleaning with alcohol or sodium hypochlorite (“bleach”, 1,000 ppm recommended)**. Also, wash thoroughly to avoid any residue of sodium hypochlorite.

* Personal Protective Equipment: medical-grade masks, gloves, long-sleeve waterproof gowns.

** Instructions for using Sodium Hypochlorite (“Bleach”)

- Dilute at 0.1% or 1,000 ppm
- E.g. Dilute 5% bleach with water at a ratio of 1 to 50
- Dilution method for 1L of solution: mix 1,000mL of water with 20mL of 5% bleach

Reference

1. Rational use of personal protective equipment for coronavirus disease 2019 (COVID-19)-Interim guidance, WHO 2020.02.27
2. A Case Series of children with 2019 novel coronavirus infection: clinical and epidemiological features. Clin Infect Dis. 2020 Feb 28.
3. (Korean) Special Protocol for Safe Management of COVID-19 Related Waste, 3rd Edition (2020.3.2), Ministry of Environment
4. Severe acute respiratory syndrome (SARS) in neonates and children. Arch Dis Child Fetal Neonatal Ed 2005;90:F461-F465.
5. Middle east respiratory syndrome coronavirus disease in children. Pediatr Infect Dis J. 2014 Sep
6. The management of community-acquired pneumonia in infants and children older than 3 months of age. Clin Infect Dis. 2011; 53 (7): e25–e76.
7. (Korean) Guide to disinfecting public facilities used by a COVID-19 patient, Version 2-1. The Central Disaster Management Headquarters, The Central Disaster Management Headquarters.
8. (Korean) Guidelines for COVID-19 residential treatment centers (2020.3.1), The Central Disaster Management Headquarters, The Central Disaster Management Headquarters.
9. COVID-19 Guidelines: Hospital-level Healthcare Facilities, The Central Disease Control Headquarters (2020.2)

Disclaimer

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