



**PHILIPPINE PEDIATRIC SOCIETY
PEDIATRIC INFECTIOUS DISEASE SOCIETY OF THE PHILIPPINES**



**INTERIM GUIDELINES ON THE SCREENING, ASSESSMENT AND CLINICAL
MANAGEMENT OF PEDIATRIC PATIENTS WITH SUSPECTED OR CONFIRMED
CORONAVIRUS DISEASE 2019 (COVID-19)
30 March 2020**

INTRODUCTION

The World Health Organization has declared coronavirus disease 2019 (COVID-19) to be a global pandemic. As the total number of reported cases increase, it is prudent to assume that the number of pediatric cases will also rise. Most of the cases are in adults, with higher risk of severe infection reported in older patients and those with chronic medical conditions. Although only a small number of cases are in children, there is a need to be able to evaluate and manage these cases in an expedient manner so as to ensure favorable outcomes, particularly in those with comorbidities, such as malnutrition, chronic heart, lung or kidney disease, HIV, immunodeficiency or malignancy. There is also limited data on the disease course and potential for adverse outcomes in neonates and young infants, who may be more vulnerable to the infection (Y Dong et al., 2020).

The purpose of this rapid advice is to provide guidance to pediatricians, general and family practitioners, and other healthcare professionals caring for children on how to assess and treat pediatric patients with suspected or confirmed COVID-19.

This rapid advice is divided into two parts: Part 1 will mainly focus on proper triaging of children and Part 2 will largely focus on basic concepts of management.

Part 1 SCREENING AND ASSESSMENT

According to the Centers for Disease Control and Prevention, data for human infection with coronaviruses suggest that the incubation period may range for 2-14 days but is estimated at 4 days (Guan et al., 2020). This will be the time frame considered for exposure in this report.

I. SYMPTOMS AND/OR EXPOSURE HISTORY

- A. Investigate whether the child has had any acute respiratory infection symptoms within 14 days:
 1. Symptoms of acute respiratory infection in children include:
 - a. Fever defined as an axillary temperature of 38°C and above
 - b. Cough
 - c. Sore throat
 - d. Difficulty of breathing (fast breathing, chest indrawing, noisy breathing in a calm child)



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2. Other symptoms may also be present which warrant close observation of the child, such as:
 - a. Rhinorrhea
 - b. Diarrhea
 - c. Vomiting
 - d. Abdominal pain
 - e. Fatigue
 - f. Headache
 - g. Myalgia
- B. Assess the child's travel history or history of close contact:
1. Evaluate if the child has been in close contact with sick individuals, whether from home or during travel, who are proven COVID-19 patients or highly suspected of COVID-19. *Close contact* is defined as a person who is involved in any of the following from 2 days before and up to 14 days after the onset of symptoms in the patient:
 - a. Having face-to-face contact with a COVID-19 patient within 1 meter and for >15 minutes;
 - b. Providing direct care for patients with COVID-19 disease without using proper personal protective equipment;
 - c. Staying in the same close environment as a COVID-19 patient (including sharing a workplace, classroom or household or being at the same gathering) for any amount of time;
 - d. Travelling in close proximity with (that is, within 1 m separation from) a COVID-19 patient in any kind of conveyance; and
 - e. Other situations, as indicated by local risk assessments (WHO Interim Guidance March 2020)
 2. Take note of any history of recent travel within the last 14 days to areas with localized transmission or local communities under enhanced quarantine. Check DOH updates to confirm if the child's community is classified as such. Note also if there is clustering of influenza-like illnesses in the home, neighborhood or area.
- Note:* Exposure to a patient under monitoring (PUM) is not considered close contact.
- C. If there is history of travel or close contact as described above, the symptomatic child is considered "**Patient Under Investigation (PUI)**".
 - D. If there is no history of travel nor close contact, screen for pre-existing comorbidities contributory to and/or causative of the current complaint (e.g. asthma, risk factors for aspiration). Take note also of pre-existing immunocompromising conditions that may predispose to a more severe condition (malignancy, congenital immunodeficiencies, HIV/AIDS, severe acute malnutrition, congenital heart/lung/kidney disease, intake of immunosuppressant drugs, etc.). If these exist, assess the need for inpatient care and manage accordingly. If none of these conditions are present, treat the child as having an acute respiratory infection and follow "Home Intervention" guidelines as described in Part 2.



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- E. If there is no history of travel nor close contact, but the child has worsening respiratory tract infection unresponsive to standard treatment after 2-3 days at home, and with no etiology determined, the child is considered “**Patient Under Investigation (PUI)**”.

II. CLASSIFICATION CRITERIA

*After the child is assessed to be a **PUI**:*

- A. Classify as **PUI with Severe/Critical symptoms** if they fulfill the criteria stated below. Criteria for **Severe/Critical** symptoms are as follows:

1. Any child with cough or difficulty of breathing PLUS at least ONE of the following:
 - a. Central cyanosis or SpO₂ <90%
 - b. Severe respiratory distress (e.g. grunting, very severe chest indrawing)
 - c. Signs of pneumonia with a general danger sign: inability to breastfeed or drink, lethargy/movement only when stimulated, unconsciousness, or convulsions
 - d. Other signs: chest indrawing, fast breathing (in breaths/min):
 - <2 months: RR ≥60 breaths per minute
 - 2-11 months: RR ≥50 breaths per minute
 - 1-5 years: RR ≥40 breaths per minute
2. Any child with suspected or proven infection and ≥2 SIRS criteria, of which one must be abnormal temperature or white blood cell count (sepsis)
3. Any child presenting with septic shock, defined as hypotension (SBP <5th centile or >2SD below normal for age) or at least 2 of the following:
 - a. Altered mental state
 - b. Tachycardia (HR > 160 bpm in infants or > 150 bpm in children) or bradycardia (HR <90 bpm in infants or <70 bpm in children)
 - c. Prolonged capillary refill (>2 sec) or warm vasodilation with bounding pulses
 - d. Tachypnea
 - e. Mottled skin or petechial or purpuric rash
 - f. Increased lactate
 - g. Oliguria
 - h. Hyperthermia or hypothermia

Note:

“Difficulty of breathing” is intended to capture dyspnea or air hunger AND NOT nasal congestion or other upper airway obstruction.

- B. Classify **PUI with Non-severe symptoms** if they do not fulfill the criteria for PUI with Severe/Critical symptoms.

Patients with Non-severe symptoms may range from **Mild** to **Moderate** symptoms. Children with **Mild** symptoms are patients with uncomplicated upper respiratory tract viral infection, may have non-specific symptoms such as fever, fatigue, cough (with or without sputum production), anorexia, malaise, muscle pain, sore throat, dyspnea, nasal congestion, or headache. Rarely, patients may also present with diarrhea, nausea and vomiting. Patients with **Moderate** symptoms include frequent fever and



cough (mostly dry which may become productive), or wheezing but no obvious shortness of breath. Some may be asymptomatic but with imaging findings, which are considered subclinical (Dong et al., 2020).

- C. Classify as **Confirmed COVID-19** if positive for SARS-CoV-2 on a nucleic acid detection test such as reverse transcriptase polymerase chain reaction (RT-PCR) regardless of symptoms.

Part 2 CLINICAL MANAGEMENT

Since there is no specific antiviral yet proven to be effective for COVID -19, management remains focused on providing best supportive care, management of co-existing conditions and treatment of possible bacterial co-infections. Table 1 classifies pediatric patients suspected or confirmed to have COVID infection and harmonizes COVID -19 disease classification with PCAP classification; this can serve as a guide for clinical management.

I. PUI WITH NON-SEVERE SYMPTOMS

COVID-19 testing MAY be done for these children if testing kits are available in the facility, but in settings where kits are limited, priority must be given to PUIs with severe symptoms. The child can then be sent home after the specimen has been collected. In any circumstance that the child's condition deteriorates, or upon the discretion of the physician, advise inpatient management.

A. Home Intervention

Children with non-severe disease—and in some cases with stable underlying comorbidities—do not require hospital interventions unless there is concern for rapid deterioration or an inability to promptly return to hospital. Laboratory confirmation of COVID-19 is not necessary for PUI with mild symptoms because it will not change the management. Home management is recommended and should focus on appropriate supportive treatment, prevention of transmission of the virus to others, as well as monitoring for clinical deterioration (which will eventually prompt inpatient management). Isolation to contain or prevent virus transmission within the household and community should be prioritized. Where feasible, a communication link with health care providers should be made for the duration of the home care until the child's symptoms have completely resolved.

Isolation

- Children should stay at home and try to separate themselves from other people in the household.
- Place the child in a well-ventilated single room (e.g. open windows, use electric fans for ventilation, may use air conditioner if available) ideally with its own bathroom, where feasible.
- Confine activities of the child in his/her room. If not possible, limit shared space and movement of the child in the house.



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- Assign one person who is in good health as primary caretaker of the child (see section on *Caregiver*).
- Other household members not caring for the child should stay in a different room, or if not feasible, must always maintain a distance of at least 1 meter from the child.
- Do not allow visitors until the child has completely recovered and has no signs or symptoms of respiratory tract infection.
- The child should use dedicated dishes, drinking glasses, cups, eating utensils, towels, and beddings.
- The child and household members should wear a surgical face mask when in the same room or when interacting inside the home as much as possible. Cloth masks do not provide adequate protection.
- The child and all household members should practice hand hygiene (handwashing or use of hand disinfection) following contact with the child suspected or confirmed to have COVID-19.
- Teach the child to cover his/her mouth and nose during coughing or sneezing using tissue, inner part of the elbow or sleeves, followed by hand hygiene.

Caregiver

- Ideally, assign one person of good health, non-elderly, and with no underlying comorbidities and immunocompromising conditions, to avoid undue risk to the caregiver.
- Caregivers should wear a surgical mask that covers their nose and mouth when in the same room as the patient. DO NOT touch or handle masks during use. Once wet or dirty with secretions, remove the mask WITHOUT touching the front and replace immediately with a dry mask. DO NOT reuse masks.
- Caregiver should use disposable gloves when handling oral or respiratory secretions, feces or urine. Wash and disinfect hands after removing gloves.

Hygiene and Sanitation

- Proper hand washing with soap and water for at least 20 seconds should be performed in these situations:
 - Before and after contact with the child, especially after handling the child's secretions
 - Before and after preparing the child's food / feeding the child
 - After assisting the child in using the toilet or diaper-changing, and after bathing the child
 - If hands are visibly dirty
- Use disposable paper towels or clean cloth towels (with frequent replacements) to dry hands.
- Avoid direct contact with the child's secretions and stool.
- The toilet should be flushed with the lid down to prevent droplet splatter and aerosol clouds.
- Clean and disinfect surfaces frequently touched in the room as well as toilet surfaces using regular household soap or detergent. Ensure cleaning agents are properly labeled and stored beyond the child's reach, to prevent accidental ingestion/poisoning.



Laundry and Disposal of Soiled Linen and Diapers

- Waste generated during home care (including diapers, tissue/wipes, etc.) should be placed into a waste bin with a lid in the child's room. The trash bag must be tightly sealed before disposal.
- Do not shake dirty laundry; this minimizes the possibility of dispersing the virus through the air.
- Clothes/beddings/pillows/stuffed toys used by the child must be washed separately.
- Machine washing with warm water and laundry detergent is recommended. If machine washing is not possible, soiled linen can be soaked in hot water and soap in a large drum using a stick to stir and being careful to avoid splashing. The drum should then be emptied, and the linens soaked in 0.05% chlorine for approximately 30 minutes. The laundry should then be rinsed with clean water. If still dirty, soiled linen may be washed thoroughly using regular laundry soap/household detergent and warm water, then allowed to dry under the sun.
- If excreta are on surfaces of linen or towels, the excreta should be carefully removed with paper towels and immediately safely disposed of in a toilet or latrine. Then the soiled linen or towels should be treated as soiled linens.
- Wear disposable gloves and face masks when handling soiled items. Place all used disposable gloves, face masks, and other contaminated items in a lined container before disposing of them with other household waste.
- Wash hands (with soap and water or an alcohol-based hand sanitizer) immediately after handling these items. Soap and water should be used preferentially if hands are visibly dirty.

Home Therapies

- Specific medications against COVID-19 are still under investigation. Studies are still currently being evaluated, consolidated, and reviewed to ensure that recommendations are evidence-based.
- Antipyretics such as paracetamol may be given to make the febrile child more comfortable. Data on ibuprofen use is equivocal at this time.
- The child may be prescribed empiric antibiotic treatment according to his or her physician's clinical judgment. Antibiotics should be used rationally based on existing national guidelines for PCAP and respiratory tract infections.
- Home nebulization should be avoided unless the child's physician decides that it is indicated, because the risk of infection transmission via droplet nuclei or aerosols may increase during nebulizer treatments. Use a metered-dose inhaler if necessary.
- While getting essential vitamins and minerals such as Vitamin C, Vitamin D3 and Zinc from supplements may help bolster the immune system, emphasis must be made on providing a balanced diet and proper nutrition, as well as adequate hydration.

Emotional and Mental Support

- If the child can comprehend, parents are encouraged to talk to the child about their condition in a way they can understand, giving reassurance that they are being observed closely at home with the supervision of their doctor.



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- Limit the family's exposure to news coverage, including social media. Children may misinterpret what they see and hear, and thus can be frightened about something they do not understand.
- Continue with the child's regular routine while under quarantine at home and allow time for learning activities and simple play if the child feels well enough for it. Observe limits in screen time as recommended for the child's age.

Monitoring

- The caregiver should be instructed to record the child's symptoms (see Annex for sample monitoring form), and should notify the healthcare provider if the child's symptoms worsen or if one of the child's contacts develops symptoms. It may be necessary to bring the child to the nearest health care facility for proper assessment if symptoms worsen or if no improvement is seen in 2-3 days at home.

B. Discontinuation of Home Isolation for Patients with Suspected or Confirmed COVID-19

1. PUI or suspected COVID-19 but no PCR test done

Based on recommendations from the US CDC, persons who have symptoms of COVID-19 but were not tested for SARS-CoV-2 and were advised to care for themselves at home may discontinue home isolation when the following conditions are met:

- a. At least 3 days (72 hours) have passed since recovery, defined as resolution of fever without the use of fever reducing medications and improvement in respiratory symptoms (e.g. cough, shortness of breath);
AND
- b. At least 7 days have passed since symptoms first appeared

The World Health Organization simplifies its discharge criteria with the advice to complete home quarantine for 14 days after resolution of symptoms.

2. Patients with PCR-confirmed COVID-19

Based on US CDC guidelines, persons with PCR-positive test result for COVID-19 who have symptoms and were directed to care for themselves at home may discontinue home isolation under the following conditions:

- a. Resolution of fever without the use of fever-reducing medications, AND
- b. Improvement in respiratory symptoms (e.g., cough, shortness of breath),

AND, If with access to repeat testing:

Negative results of an approved molecular assay for COVID-19 from at least two consecutive nasopharyngeal swab specimens collected ≥ 24 hours apart.

Where repeat testing is not possible, WHO recommends that confirmed patients remain isolated for an additional two weeks after symptoms resolve.



II. PUI WITH SEVERE/CRITICAL SYMPTOMS

All PUIs with severe/critical symptoms should be admitted, would be assumed as having COVID-19 and should be tested for such (see “Diagnostics” below). Alternatively, if the facility is not equipped to handle COVID-19 patients, referral to a COVID-19 referral center must be done.

A. Inpatient Management

1. The child, as a PUI with *severe* symptoms, should be admitted in the hospital and placed in an isolation room, or to a dedicated COVID-19 ward/floor, as soon as possible.
2. A dedicated healthcare worker should be in full Personal Protective Equipment (N95 mask, eye shield, full impermeable gown, gloves, and shoe covers) when handling the PUI. Proper donning and doffing of PPEs and infection control measures should be observed at all times.
3. Specimen collection must be performed by a knowledgeable medical worker. Ensure that assistance is available as the child may be uncooperative during the procedure. Collect a nasopharyngeal swab (NPS) and an oropharyngeal swab (OPS), and if possible, a lower respiratory tract specimen. Samples must be sent to the Research Institute for Tropical Medicine (RITM) or to a designated laboratory through the proper channels. Case investigation forms (CIF) must be accurately filled out for proper documentation.
4. The WHO recommends standard, contact, and droplet precautions with eye and face protection, with addition of airborne precautions as needed during aerosol-generating procedures.

B. Diagnostics

1. Molecular-based assays

Nucleic acid amplification testing using the **reverse transcriptase polymerase chain reaction (RT-PCR)** is the preferred method for diagnosing SARS-CoV-2 infection. Appropriate specimens include samples collected from the upper (pharyngeal swabs, nasal swabs, nasopharyngeal secretions) and / or lower airways (sputum, airway secretions, bronchoalveolar lavage fluid). The Department of Health advises the collection of both nasopharyngeal and oropharyngeal specimens. For patients for whom it is clinically indicated (e.g. those receiving invasive mechanical ventilation), a lower respiratory tract aspirate or bronchoalveolar lavage sample should be collected and tested as a lower respiratory tract specimen.

SARS-CoV-2 preferentially proliferates in type II alveolar cells (AT2) and peak of viral shedding appears 3 to 5 days after the onset of disease. Median duration of viral RNA detection was 20 days and the longest observed duration



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of viral shedding was 37 days in survivors (Huang C et al 2020; Zhou F et al 2020). Appropriate respiratory specimens should be collected as soon as possible once a PUI is identified, regardless of the time of symptom onset. A positive test for SARSCoV-2 confirms the diagnosis of COVID-19. If initial testing is negative but the suspicion for COVID-19 remains, resampling and testing from multiple respiratory tract sites is recommended (WHO Interim Guidance Mar 2020).

2. Other Laboratory Tests

- a. **Preliminary laboratory tests** are listed below. Take note of the possible results seen in patients with COVID-19 based on recently published studies. Other tests may be ordered depending on the child's presentation and upon the physician's discretion.
 - **Complete blood count** - White blood cell counts may vary, but leukopenia, leukocytosis, and lymphopenia have been reported, although lymphopenia appears most common (Weiyong Lu et al., 2020). Platelet count may be normal (Anjue Tang et al., 2020).
 - **Imaging studies**
 - **Chest x-ray** findings may show unilateral or bilateral patchy infiltrates, multiple small patchy shadows and interstitial changes, remarkable in the lung periphery, with severe cases developing to bilateral multiple ground glass opacity, infiltrating shadows, and pulmonary consolidation, with infrequent pleural effusion (Cai Jiehao et al., 2020; Zhi-Min Chen et al., 2020).
 - **Chest CT scans** show typical viral pneumonia patterns (Weiyong Liu et al., 2020) with ground-glass opacification with or without consolidative abnormalities.
 - **Chest ultrasound** has been used as an alternative to chest CT scan due to its ease of use at point-of-care, absence of radiation exposure, and lower cost. Experience in adults have shown the following findings: thickening of the pleural line with pleural line irregularity, B lines in a variety of patterns including focal, multifocal, and confluent, and consolidation (Qian-Yi Peng et al., 2020).
 - **CRP and Procalcitonin** - patients with COVID-19 may have normal or elevated procalcitonin and CRP; a rapid rise or significantly elevated procalcitonin may indicate secondary bacterial infection, but may also be seen in severe COVID-19 without bacterial co-infection (Xia et al. 2020).
 - **Arterial Blood Gas (ABG) or pulse oximetry** – to assess the severity of pneumonia; Oxygen saturation at room air <95% measured by pulse oximetry may indicate pneumonia and if <90% may indicate severe pneumonia
- b. **Other tests to determine alternative etiology or secondary infection.** Whenever possible, it is advised to determine an alternative etiology of acute respiratory infection or diarrhea using appropriate diagnostics, which may include the following:



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- Bacterial and Fungal Cultures (blood, and/or stool, urine and other appropriate specimens) – to test for bacteria or fungi, ideally collected before antimicrobial or antifungal therapy
- Rapid antigen detection tests for specific bacterial or viral pathogens
- Multiplex respiratory or gastrointestinal panel tests

Co-infections have been documented, however, and tests that are positive for other bacterial or viral pathogens do not rule out COVID-19.

C. Experimental Therapeutic Interventions for Severe PUI and Confirmed COVID-19 in Children

DRUG	DOSING REGIMEN AND PREPARATION	DURATION	CONTRAINDICATIONS
Hydroxychloroquine*	5 mg/kg/day BID (Max: 400mg) Formulation: 200 mg/tab Day 1 6-8 y/o 1 tab BID 9-11 y/o 1 ½ tab BID ≥ 12 y/o 2 tabs BID Days 2-5 6-8 y/o ½ tab BID 9-11 y/o ½ up to 1 tab BID ≥ 12 y/o 1 tab BID If the patient cannot swallow the tablet, crush and dissolve in a small amount of water, milk or juice to be given with meals.	5 days May be extended to 10 days depending on clinical status	<6 years of age - - Hypersensitivity to 4-aminoquinolines - Presence of retinal or visual field changes - Epilepsy - Porphyria - Psoriasis
OR			
Chloroquine*	10mg(base)/kg/day BID (Max: 500 mg phosphate or 300 mg base/dose) Formulation: Chloroquine phosphate 250 mg/tab (equivalent	5 days May be extended to 10 days depending on clinical status	



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	<p>to 150mg of Chloroquine base)</p> <p>0-11months ½ tab BID 1-3 y/o 1 tab BID 4-6 y/o 1 ½ tab BID 7-11 y/o 2 tabs BID 12-15 y/o 3 tabs BID ≥ 16 y/o 4 tabs BID</p> <p>If the patient cannot swallow the tablet, crush and dissolve in a small amount of water, juice, milk, or chocolate syrup to be given with meals.</p>		
PLUS			
Azithromycin	10 mg/kg QD (Max:500mg/day)	5 days	- Hypersensitivity to any macrolide - History of cholestatic Jaundice or hepatic dysfunction associated with prior use
AND			
Vitamin D3 (Cholecalciferol)	<2 years: 1,000 IU/day >2 years: 2,000 IU/day	5 days	
AND			
Zinc sulfate	2 months- <5 years: 15mg BID 5 years and older: 20mg BID	7 days, then give regular RDA dose	

*There is lack of high-quality evidence to conclude that chloroquine or hydroxychloroquine is effective and safe for the treatment of COVID-19. This is an off-label use, thus, close monitoring by health authorities and hospital administration is required and informed consent from the parent or legal guardian must be sought before initiation of treatment.

Disclaimer: Recommendations were made based on the best available evidence. As the knowledge on this disease is still evolving, these recommendations may change as more evidence becomes available.



D. Discharge Considerations

1. Children can be discharged from a health care facility once the following criteria are met:
 - a. Body temperature is back to normal for more than three (3) days
 - b. Respiratory symptoms have already improved
 - c. Pulmonary imaging shows resolution of inflammation
 - d. Although a negative nucleic acid test from respiratory tract samples is desirable, when availability of tests is limited, patients may be discharged once clinically improved. Home isolation should be continued for 14 days after resolution of symptoms (see part B. Discontinuation of Home Isolation for Patients with Suspected or Confirmed COVID-19). A repeat test can be done 14 days after discharge, to decrease the likelihood of a PCR test returning positive due to non-viable virus.

2. After discharge, ensure that the following considerations are kept in mind:
 - a. Monitor health status in isolation for 14 days. See *Home Intervention* Section.
 - b. Follow-up in 2 to 4 weeks after discharge.
 - c. Once fully recovered, ensure that the child's immunizations are up to date. Consult the child's healthcare provider for proper scheduling.



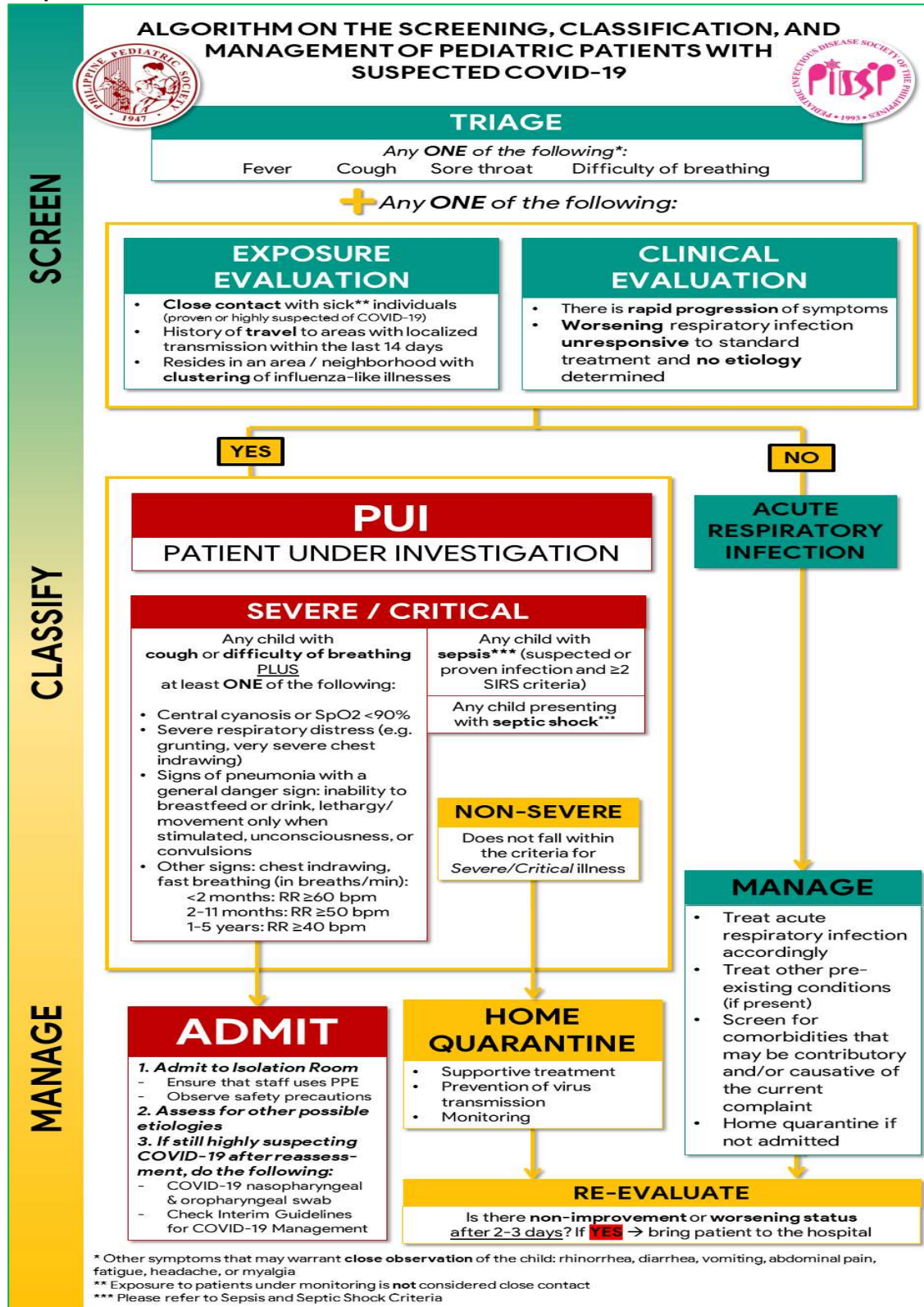
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Table 1. Classification of pediatric patients suspected or confirmed to have COVID infection

Classification	Signs and Symptoms	Management
NON-SEVERE	Non-specific symptoms such as fever, cough, sore throat, rhinorrhea, diarrhea, vomiting, abdominal pain, fatigue, headache, myalgia	<ul style="list-style-type: none"> • Home isolation in single room • Maintain adequate hydration • Manage other symptoms as appropriate
SEVERE	Child with non-severe pneumonia has: <ul style="list-style-type: none"> • cough or difficulty breathing • fast breathing (in breaths/min): <2 months, ≥ 60 2–11 months, ≥ 50 1–5 years, ≥ 40 and no signs of severe pneumonia	<ul style="list-style-type: none"> • Admit to a designated isolation room • Manage as pediatric community-acquired pneumonia (pCAP) A/ B • Manage other symptoms as appropriate
	Child with cough or difficulty in breathing, plus at least one of the following: <ul style="list-style-type: none"> • central cyanosis or SpO₂ <90% • severe respiratory distress (e.g. grunting, chest indrawing) • signs of pneumonia with a general danger sign: inability to breastfeed or drink, lethargy or unconsciousness, or convulsions Other signs of pneumonia may be present: chest indrawing, fast breathing (in breaths/min): <2 months, ≥ 60 2–11 months, ≥ 50 1–5 years, ≥ 40	<ul style="list-style-type: none"> • Admit to a designated isolation room • Manage as pediatric community-acquired pneumonia (pCAP) C • Manage other symptoms as appropriate
	Sepsis: suspected or proven infection and ≥ 2 SIRS criteria, of which one must be abnormal temperature or white blood cell count	
CRITICAL	Septic shock: any hypotension (SBP <5th centile or >2 SD below normal for age) or 2-3 of the following: <ul style="list-style-type: none"> • altered mental state • Tachycardia (HR > 160 bpm in infants or > 150 bpm in children) or bradycardia (HR <90 bpm in infants or <70 bpm in children) • prolonged capillary refill (>2 sec) or warm vasodilation with bounding pulses • tachypnea • mottled skin or petechial or purpuric rash • increased lactate • oliguria • hyperthermia or hypothermia 	<ul style="list-style-type: none"> • Admit to a designated isolation room • Manage as pediatric community-acquired pneumonia (pCAP) D • Manage other symptoms as appropriate
	New or worsening respiratory symptoms within one week of known clinical insult	Management will depend on classification of ARDS

Figure 1. Algorithm on the screening, classification and management of pediatric patients with suspected COVID-19



CLASSIFY

MANAGE



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Appendix A. Sample Symptom Monitoring Form

(Adapted from WHO and CDC recommendations by the “PH COVID-19 Health Care Workers’ Chat Group” Team in collaboration with PSPHP, and Foundation of Family Medicine Educators)

Name: _____

Quarantine period: _____ to _____

Instructions: Monitor the child twice a day (AM and PM). Put a check (✓) if symptoms are present. For fever, write down the exact temperature of the child.

Week ____	Date _____		Date _____		Date _____		Date _____		Date _____		Date _____		Date _____	
	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
No symptoms														
Fever (write temp)														
Cough														
Sore throat														
Difficulty of breathing														
Runny nose														
Diarrhea														
Vomiting														
Abdominal pain														
Fatigue														
Headache														
Muscle pains														
Other symptoms														
1.														
2.														
3.														
Medicines given														
1.														
2.														
3.														

Important contact numbers to remember:

DOH COVID-19 Hotline: (02) 894-COVID or (02) 894-26843

Provincial/City/Municipality COVID-19 Hotline: (contact details)

Hospital Emergency Room: (name of hospital and contact details)

Pediatrician: (contact details / email address)



Appendix B. Monographs from the Philippine National Formulary 2019

HYDROXYCHLOROQUINE

Oral: 200 mg tablet (as sulfate)

NOTE: Hydroxychloroquine sulfate 200 mg is equivalent to 155 mg hydroxychloroquine base and 250 mg chloroquine phosphate.

Indications: Management of systemic lupus erythematosus (SLE) and rheumatoid arthritis (RA)

Contraindications: Pre-existing maculopathy of the eye; retinal or visual field changes attributable to 4-aminoquinolines; long-term use in children

Dose:

Rheumatoid arthritis, *by mouth*, ADULT, initially 400 to 600mg daily taken with food or milk; increase dose gradually until optimum response level is reached; usually after 4–12 weeks dose should be reduced by ½ to a maintenance dose of 200 to 400 mg daily in 1–2 divided doses (maximum daily dose, 6.5 mg/kg or 400 mg, whichever is lower); CHILD, up to 6.5 mg/kg daily or 400 mg, whichever is lower. Lupus erythematosus, *by mouth*, ADULT, 400 mg 1–2 times daily for several weeks to months depending on response; 200–400 mg daily in 1 to 2 divided doses for prolonged maintenance therapy (maximum daily dose, 6.5 mg/kg or 400 mg, whichever is lower).

Dose Adjustment:

Renal and Hepatic Impairment:

Dose adjustment may be necessary.

Precautions:

WARNING: Should be prescribed only by physicians familiar with its use. May cause dizziness and blurred vision.

Cardiovascular effects e.g. rare cardiomyopathy in long term use; hematologic effect e.g. agranulocytosis, aplastic anemia, and thrombocytopenia;

Neuromuscular effects e.g. myopathy, neuromyopathy, and progressive weakness;

Ophthalmic effects e.g. loss of visual acuity, macular pigmentary changes, and loss of foveal reflex; G6PD deficiency; Hepatic impairment;

Porphyria and psoriasis;

Pediatric (use caution due to increased sensitivity to aminoquinolones).

Pregnancy (may decrease the incidence of cardiac malformations associated with neonatal lupus);

Lactation (excreted into breast milk).

SKILLED TASKS. May impair ability to perform skilled tasks, such as operating machinery or driving.

Adverse Drug Reactions:

Common: Ataxia, dizziness, emotional disturbance, headache, irritability, lassitude, nerve deafness, nervousness, nightmares, psychosis, seizure, suicidal tendencies, vertigo, alopecia, bleaching of hair, bullous rash, dyschromia, exacerbation of psoriasis, pruritus, urticaria, exacerbation of porphyria, weight loss, anorexia, diarrhea, nausea, stomach cramps, vomiting, agranulocytosis, anemia, aplastic anemia, hemolysis, leukopenia, thrombocytopenia, hepatic insufficiency, angioedema, myopathy, accommodation disturbance, corneal changes, decreased visual acuity, epithelial keratopathy, macular degeneration, macular edema, maculopathy, nystagmus, optic disk disorder (pallor/atrophy), retinal pigment changes, retinal vascular disease, retinitis



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pigmentosa, retinopathy, scotoma, vision color changes, visual field defect, tinnitus, bronchospasm, respiratory failure (myopathy related)

Less Common: Hypoglycemia (potentially fatal), keratopathy

Rare: Cardiomyopathy

Drug Interactions:

Avoid concomitant use with:

Increases risk of adverse or toxic effects of the following drugs:

Artemether, Dapsone (*hemolytic reactions*),

Lumefantrine, Mefloquine (*convulsions; QTcprolongation*)[if concomitant use cannot be avoided, delay administration of mefloquine until at least 12 hours after the last dose of hydrochloroquine]

Administration: Administer with food or milk.

Pregnancy Category: Not classified

ATC Code: Not available

CHLOROQUINE

Oral: 250 mg tablet (as phosphate or diphosphate) (150 mg base)

Inj.: 50 mg/mL (as phosphate or diphosphate), 20 mL vial (IM, IV) An aminoquinoline antimalarial, found effective in extra intestinal amoebiasis

Indication: Treatment of extraintestinal amoebiasis

Contraindications: Presence of retinal or visual field changes either attributable to 4-aminoquinoline compounds or any other etiology; patients with epilepsy

Dose:

Extraintestinal amoebiasis, *by mouth*, ADULT, 1 g (600 mg base) on day 1, followed by 500 mg (300 mg base) after 6 hours, 24 hours, and 48 hours following the first dose, may be combined with an intestinal amebicide.

Hepatic amoebiasis, *by mouth*, ADULT, 600 mg (as base) daily for 2 days, then 300 mg daily for 2 or 3 weeks given with emetine or dehydroemetine; CHILD, up to 3 mg/kg daily (maximum daily dose, 300 mg).

Dose Adjustment:

Renal Impairment:

For mild-to-moderate renal impairment, dose reduction is warranted.

For severe impairment, the patient should be referred to a specialist.

Precautions:

G6PD deficiency; Psoriasis may be worsened. Porphyria cutanea tarda

Epilepsy; May aggravate myasthenia gravis; neurological disorders. QT interval

Renal impairment; hepatic impairment (avoid concurrent therapy with hepatotoxic drugs); severe GI disorders.

Pregnancy (in the first trimester of pregnancy, quinine in combination with clindamycin for 7 days is the treatment

of choice – this combination can be used throughout pregnancy; in acute malaria and third trimester: benefit of prophylaxis and treatment outweighs risk).

NOTE: If clindamycin is not available, then quinine should be given as monotherapy.

Breastfeeding (at doses used for malaria prophylaxis; amount in milk is probably too small to be harmful, and inadequate for reliable protection against malaria in the breastfed infant; avoid breastfeeding when used for rheumatic disease).

NOTE: If the patient continues to deteriorate after chloroquine medication – suspect resistance and administer quinine IV as an emergency measure.



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Adverse Drug Reactions:

Common: GI disturbances, itch, lack of appetite, pruritus, skin eruptions, weight loss

Less Common: Anxiety, confusion, dizziness, drowsiness, headache, hypotension, irreversible retinopathy, paresthesia, personality changes, psychotic episodes, reversible corneal opacities, sleep disorders, vertigo, visual disturbances

Rare: Hypersensitivity reactions, pancytopenia, porphyria, prolonged QT interval, psoriasis, neuromyopathy, seizure, rash, Steven-Johnsons Syndrome, thrombocytopenia, tinnitus, toxic epidermal necrolysis, CV collapse (potentially fatal); convulsions (potentially fatal); coma (potentially fatal)

Drug Interactions:

NOTE: Chloroquine has a long half-life; consequently, the potential for drug interactions may persist for weeks after it has been stopped.

Monitor closely with: Reduces the absorption of Chloroquine: Antacids (e.g. Aluminum or Magnesium Hydroxide)

Avoid concomitant use with:

Increases risk of adverse or toxic effects of the following drugs:

Artemether + Lumefantrine (*potentially hazardous interactions*), Drugs which prolong QT Interval (*arrhythmia; prolonged QT interval*), Other Antimalarials e.g. Mefloquine (*arrhythmia; prolonged QT interval*)

Administration: To avoid nausea and vomiting, tablets should be administered after meals.

NOTE: If part or all of a dose is vomited, re-administer the same amount.

Pregnancy Category: C

ATC Code: P01BA01



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QUESTIONS AND ANSWERS ON COVID 19
30 March 2020

EPIDEMIOLOGY	
1. What is COVID-19?	COVID-19 is the infectious disease caused by the newly discovered coronavirus. The virus causing this disease is the severe acute respiratory syndrome coronavirus 2 or SARS CoV-2 , a betacoronavirus that is closely linked to the severe acute respiratory syndrome (SARS) virus.
TRANSMISSION	
2. How does COVID-19 spread?	COVID-19 disease can spread from person-to-person through small droplets released from the nose or mouth when a person coughs, sneezes or talks. People get infected when these droplets land directly on the mucosal surfaces of the eyes, nose or mouth or when they breathe in these infectious droplets when in close proximity (distance is less 1 meter or 3 feet away) from an infected person. Infectious droplets can also land on objects and surfaces around the person (droplet transmission). People can also get infected when they touch these infected objects or surfaces then touch their eyes, nose or mouth (contact transmission).
3. Who are considered as close contacts?	<i>Close contact</i> is defined as a person who is involved in any of the following from 2 days before and up to 14 days after the onset of symptoms in the patient: (a) having face-to-face contact with a COVID-19 patient within 1 meter and for >15 minutes; (b) providing direct care for patients with COVID-19 disease without using proper personal protective equipment; (c) staying in the same close environment as a COVID-19 patient (including sharing a workplace, classroom or household or being at the same gathering) for any amount of time; (d) travelling in close proximity with (that is, within 1 m separation from) a COVID-19 patient in any kind of conveyance; and (e) other situations, as indicated by local risk assessments.
4. Can the virus that causes COVID-19 be transmitted through the air?	Studies to date suggest that the virus that causes COVID-19 is mainly transmitted through contact with respiratory droplets rather than through the air and do not appear to linger in the air. Airborne transmission from person-to-person over long distances is unlikely. However, there are still uncertainties regarding transmission of SARS-CoV-2 hence, airborne precautions (N95 mask, eye goggles, gown, cap) are recommended when performing aerosol-



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	generating procedures, such as during nebulization, open suctioning of respiratory tract, intubation, bronchoscopy, cardiopulmonary resuscitation.
5. Can COVID-19 be caught from a person who has no symptoms?	The main way the disease spreads is through respiratory droplets expelled by someone who is coughing sneezing and talking. The risk of catching COVID-19 from someone with no symptoms at all is very low. However, many people with COVID-19 experience only mild symptoms. This is particularly true at the early stage of the disease. It is therefore possible to catch COVID-19 from someone who has, for example, just a mild cough and does not feel ill. There is ongoing research on the period of transmission of COVID-19 and findings may change based on the results.
6. Can COVID-19 be transmitted from the feces of someone with the disease?	Live virus has been cultured from feces but the risk of transmission through the fecal-oral route, particularly for infants and children who are not toilet-trained, appears to be low. There have been no reports of fecal-oral transmission of the COVID-19 virus to date. However, since there still is a possible risk, it is advised to clean hands regularly, especially after using the bathroom, handling soiled linens and before eating.
7. Can SARS-CoV-2 be transmitted by breastfeeding?	Breastfeeding offers several protective effects that may be able to protect against increased mortality and morbidity from infectious diseases. The risk of transmission from breastmilk is low because breastmilk samples from the mothers after the first lactation were found to be negative for SARS-CoV-2. However, because of the close contact between the mother and child during breastfeeding, droplet and contact transmission of the virus can occur.
8. What precautions can be taken by mothers who choose to continue breastfeeding?	Mildly symptomatic mothers who are suspected or confirmed to have COVID-19 who choose to breastfeed their infant should wear a surgical face mask at all times, cover nose and mouth during coughing or sneezing with tissue or flexed elbow, practice hand hygiene before and after touching or carrying the infant, and routinely clean and disinfect surfaces which the symptomatic mother has been in contact with. In symptomatic mothers with severe COVID 19 or who have complications that prevent her from caring for her infant, separation of the mother and infant may be necessary. The following feeding alternatives may be given to mothers who are not able to breastfeed or express breastmilk: relactation, wet nursing, donor human milk or appropriate breastmilk substitutes.



CLINICAL SYMPTOMS	
<p>9. What are the symptoms of COVID-19 in children?</p>	<p>In the largest epidemiologic study involving 2143 pediatric patients with COVID-19 from Hubei province and the bordering provinces in China, majority were mild cases with only one mortality (<i>Dong Y, Mo X, Hu Y, et al. Pediatrics. 2020</i>). The severity of illness based on defined criteria were as follows:</p> <ul style="list-style-type: none"> • 4.4 % were asymptomatic • 50.9 % had mild disease- symptoms of upper respiratory infection, i.e. fever, cough, sore throat, runny nose, sneezing; some presented only with digestive symptoms such as nausea, vomiting, abdominal pain and diarrhea • 38.8 % had moderate symptoms- pneumonia with no hypoxemia or lung lesions on chest CT • 5.9% were severe and critical disease - severe symptoms included progressing respiratory symptoms such as hypoxemia (oxygen saturation < 92%) and cyanosis which may be concomitant with gastrointestinal symptoms such as diarrhea; critical cases were children with respiratory failure, ARDS, shock, encephalopathy and organ dysfunction including myocardial injury or heart failure, coagulation dysfunction, and acute kidney injury. <p>Most of those with severe or critical illness were pre-school children below 5 years old and infants below 1 year old.</p>
<p>10. Is hospital admission necessary for all children suspected or confirmed to have COVID-19 and who develop fever and mild respiratory symptoms?</p>	<p>Patients with mild disease do not require hospital interventions unless there is concern for rapid deterioration or an inability to promptly return to a designated COVID-19 hospital if they get worse. Patients should have none of the criteria for severe disease.</p> <p>Mild disease may include those with uncomplicated upper respiratory tract infection, those with non-specific symptoms such as fever, fatigue, cough with or without sputum production, anorexia, malaise, muscle pain, sore throat, dyspnea, nasal congestion, or headache. This also includes patients with diarrhea, nausea and vomiting who can be hydrated in the home setting.</p> <p>They should be instructed to comply with home isolation procedures according to local/regional public health protocols.</p>



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<p>11. What isolation measures should be practiced at home for children with mild symptoms who are PUIs or confirmed COVID-19?</p>	<p>The following home isolation measures should be followed for children who are PUIs or COVID-19 with mild symptoms in order to prevent transmission within the household or community:</p> <ul style="list-style-type: none">• Children should stay at home and try to separate themselves from other people in the household.• Place the child in a well-ventilated single room (i.e. open windows, may use air conditioner if available) ideally with its own bathroom, where feasible.• Confine activities of the child in his/her room. If not possible, Limit shared space and movement of the child in the house.• Assign one person who is in good health as primary careaker of the child (See Section on <i>Caregiver</i>)• Other household members not caring for the child should stay in a different room, or if not feasible, must always maintain a distance of at least 1 meter from the child.• Do not allow visitors until the child has completely recovered and has no signs or symptoms of respiratory tract infection.• The child should be provided with separate dishes, drinking glasses, cups, eating utensils, towels, and beddings for his / her own use• The child and household members should wear a surgical face mask when in the same room or when interacting inside the home.• The child and all household members should practice hand hygiene (handwashing or use of hand disinfection) following contact with the child suspected or confirmed to have COVID-19• Teach the child to cover his/her mouth and nose during coughing or sneezing using tissue, inner part of the elbow or sleeves, followed by hand hygiene.
<p>12. Who among the children with suspected or confirmed COVID-19 need hospital admission?</p>	<p>PUIs or patients with COVID-19 with severe symptoms should be admitted to the hospital. Criteria for Severe symptoms are the following:</p> <p>4. Any child with cough or difficulty of breathing PLUS at least ONE of the following:</p> <ol style="list-style-type: none">a. Central cyanosis or SpO₂ <90%b. Severe respiratory distress (e.g. grunting, chest indrawing)



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	<ul style="list-style-type: none"> c. Signs of pneumonia with a general danger sign: inability to breastfeed or drink, lethargy/movement only when stimulated, unconsciousness, or convulsions d. Other signs: chest indrawing, fast breathing (in breaths/min): <ul style="list-style-type: none"> a. <2 months: RR ≥60 breaths per minute b. 2-11 months: RR ≥50 breaths per minute c. 1-5 years: RR ≥40 breaths per minute 5. Any child with suspected or proven infection and ≥2 SIRS criteria, of which one must be abnormal temperature or white blood cell count (sepsis) 6. Any child presenting with septic shock, defined as hypotension (SBP <5th centile or >2SD below normal for age) or at least 2 of the following: <ul style="list-style-type: none"> a. Altered mental state b. Tachycardia or bradycardia (HR <90 bpm or >160 bpm in infants and HR <70 bpm or >150 bpm in children) c. Prolonged capillary refill (>2 sec) or warm vasodilation with bounding pulses d. Tachypnea e. Mottled skin or petechial or purpuric rash f. Increased lactate g. Oliguria h. Hyperthermia or hypothermia
<p>CLINICAL EVALUATION</p>	
<p>13. How should children with suspected COVID 19 who are asymptomatic or have mild symptoms be evaluated without bringing them to the hospital?</p>	<p>The healthcare provider can interview the asymptomatic / mildly symptomatic PUI (or his / her adult caregiver) by telephone, text monitoring system, or video conference. Temperature monitoring could be reported by phone or shown to a provider via video conferencing.</p> <p>Those who do not improve despite supportive or specific measures after 2-3 days should be instructed to inform the healthcare provider for further evaluation.</p>
<p>DIAGNOSIS</p>	
<p>14. What is the recommended diagnostic test to confirm the diagnosis of COVID -19?</p>	<p>The diagnosis of COVID-19 can only be done via detection of the causative agent SARS-CoV-2 using nucleic acid testing such as reverse transcriptase polymerase chain reaction (RT-PCR) or other PCR-based test. The preferred specimen is the nasopharyngeal swab; oropharyngeal swab may be added.</p>



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<p>15. What is the role of antibody tests (IgM/IgG) in the diagnosis of COVID-19?</p>	<p>Specific antibodies (IgM and IgG) against the SARS-CoV-2 are produced after infection and can be detected by a variety of methods, e.g. immunochromatography, ELISA, chemiluminescence immunoassay, etc. However, these tests are not useful for early detection of disease because IgM is detectable 5-10 days after symptom onset and IgG is detectable 12 days after symptom onset. At the moment, there are no Philippine FDA-registered IgM/ IgG rapid diagnostic tests.</p>
<p>MEDICATIONS</p>	
<p>16. Are antibiotics effective in preventing or treating the COVID-19?</p>	<p>Antibiotics do not work against viruses; they only work on bacterial infections. COVID-19 is caused by a virus, so antibiotics do not work. Antibiotics should not be used as a means of prevention or treatment of COVID-19. They should only be used as directed by a physician to treat a bacterial infection.</p>
<p>17. Are there any medicines or therapies that can prevent or cure COVID-19?</p>	<p>While some western, traditional or home remedies may provide comfort and alleviate symptoms of COVID-19, there is no evidence that current medicine can prevent or cure the disease. WHO does not recommend self-medication with any medicines, including antibiotics, as a prevention or cure for COVID-19. However, there are several ongoing clinical trials that include both western and traditional medicines. WHO will continue to provide updated information as soon as clinical findings are available.</p>
<p>DISINFECTION AND SANITATION</p>	
<p>18. How long does the virus survive on surfaces?</p>	<p>It is not certain how long the virus that causes COVID-19 survives on surfaces, but it seems to behave like other coronaviruses. Studies suggest that coronaviruses (including preliminary information on the COVID-19 virus) may persist on surfaces for a few hours or up to several days. This may vary under different conditions (e.g. type of surface, temperature or humidity of the environment).</p> <p>If you think a surface may be infected, household disinfectants can kill the virus and protect yourself and others. If surfaces are dirty, they should be cleaned using a detergent or soap and water prior to disinfection. For disinfection, diluted household bleach solutions (5 tablespoons bleach +1 gallon of water), alcohol solutions with at least 70% alcohol, and most common household disinfectants should be effective.</p>



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	<p>After disinfecting surfaces, clean your hands with an alcohol-based hand rub or wash them with soap and water. Avoid touching your eyes, mouth, or nose.</p>
<p>19. What is the proper way to handle soiled beddings, towels and clothes from PUIs or confirmed COVID-19 patients?</p>	<p>The following are recommended when handling soiled beddings, towels and clothes from PUIs or confirmed COVID-19 patients:</p> <ul style="list-style-type: none">• Do not shake dirty laundry; this minimize the possibility of dispersing virus through the air.• Clothes/beddings/pillows/stuffed toys used by the child must be washed separated.• Machine wash with warm water and laundry detergent is recommended. If machine washing is not possible, soiled linen can be soaked in hot water and soap in a large drum using a stick to stir and being careful to avoid splashing. The drum should then be emptied, and the linens soaked in 0.05% chlorine for approximately 30 minutes. The laundry should then be rinsed with clean water. If still dirty, soiled linen may be washed thoroughly using regular laundry soap/household detergent and warm water, then allowed to dry under the sun.• If excreta are on surfaces of linen or towels, the excreta should be carefully removed with paper towels and immediately safely disposed of in a toilet or latrine. Then the soiled linen or towels should be treated as soiled linens.• Wear disposable gloves and face masks while handling soiled items. Place all used disposable gloves, facemasks, and other contaminated items in a lined container before disposing of them with other household waste.• Wash hands (with soap and water or an alcohol-based hand sanitizer) immediately after handling these items. Soap and water should be used preferentially if hands are visibly dirty.



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