Clinical Guidance for the Care & Treatment of COVID-19 Pediatric Patients:

Initial Evaluation, Diagnosis, and Management

Authors: Members of the Divisions of Pediatric Infectious Disease, Hospital Medicine, Outreach Medicine, Pediatric ED, PICU, Pulmonary Medicine, and MCJCHV Nursing Leadership

Approved by: Chairs of Pediatric Clinical Performance Committee, Clinical Vice Chairs of Departments of Pediatrics, and VCH President, Chief of Staff, and CNO

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Ambulatory Guidelines. Ambulatory Guidelines for patients *without* criteria for admission are detailed in a separate ambulatory document (latest version 03/16/2020)

Patients Requiring Admission

1. Pediatric patients with confirmed COVID-19, or suspected COVID-19 awaiting test results, who have respiratory distress (e.g., tachypnea, shortness of breath - SOB), hemodynamic instability, PO refusal, inadequate oral intake, or who cannot be monitored safely at home should be hospitalized. These criteria are comparable to other respiratory viral infections of childhood.

2. Any patient admitted with suspected COVID infection should have an NP swab only (not OP) obtained for COVID-19 and for respiratory pathogen panel (RPP) to rule out presence of additional respiratory pathogen(s) including influenza.

3. All patients awaiting admission in ED, or in clinics, with pending COVID-19 tests (or with known positive test) will be on *contact and droplet precautions with eye protection (CDEP) pending availability of inpatient bed.* All patients will wear a surgical mask for transport.

4. All patients with confirmed or pending COVID-19 test will be admitted to the COVID unit on CDEP. If no bed is available on the COVID unit when the patient requires admission, they will be cared for in the ED. If test result is negative, they will be moved to an appropriate inpatient unit. Patients may be removed from isolation precautions if COVID-19 and RPP testing are negative.

5. If severity indicates need for intensive care, patient will be moved to the COVID unit with ICU capability immediately. Need for ICU support will be determined by ED and ICU staff. Non-intubated patients will continue to wear surgical masks during transfer. Handover communications to the ED or COVID unit will clearly indicate the patient's potential COVID-19 diagnosis.

6. Those patients with suspected or confirmed COVID-19 infection who require aerosol generating procedures (AGP) should ideally be placed in a negative pressure room or room with a HEPA - filter and staff should wear N-95 or PAPR, gowns, gloves and eye protection. If care de-escalates after admission in a patient with confirmed COVID-19 or where test results are not yet known, and no further AGP are anticipated, patient may transfer to a non-negative pressure room on COVID unit on CDEP. If patient was in a HEPA-filtered room, HEPA-filter will need to operate for 2 hours before room can be occupied by another patient. Standard cleaning precautions for isolation rooms will be followed. If COVID-19 testing is negative, a negative pressure room or room with a HEPA-filter is no longer required and staff no longer require N-95 or PAPR or eye protection.

ED/Floor/Intensive Care Management

1. Confirmed COVID patients will be admitted to the COVID unit, regardless of need for intensive care. Patients who do not require ICU level care will be managed by hospital medicine team with support from other subspecialty teams as required. Patients should be managed according to standard procedures and protocols based on their level of care (acute care or ICU).

2. Recommendations for COVID-19 evaluation in VCH inpatients who develop symptoms after admission:
    - Only consider COVID-19 in patients with NEW onset fever and cough or dyspnea or new exposure to COVID-positive case.
    - Check a CXR and other laboratory studies, as clinically indicated, and assess the available data
        - Likelihood of hospital acquired COVID-19 infection less than community acquired; therefore, consider other reasons for fever/cough especially in children in hospital greater than 5 days
        - If patient does NOT have other clinical reasons for their new onset cough or dyspnea OR has concerning findings on CBC or CXR, place patient on CDEP precautions and proceed with COVID-19 testing. Inpatients who develop symptoms after admission are not transferred to the COVID unit while COVID-19 testing is pending.
    - Do not test asymptomatic patients, even if they report exposure to a COVID-19 patient. Testing of only symptomatic patients is current standard of care and helps to preserve available testing kits/PPE.

3. PPE usage, visitation rules, nursing care and limitations on providers will follow most current existing guidelines. *It is strongly recommended that the number of team members entering the room be minimized to preserve PPE and reduce exposures*.

4. ID consultation should be requested for all confirmed COVID-19 patients.

5. All admitted patients should have continuous pulse oximetry and heart rate monitoring.

6. Where consultation with other services is indicated, use of teleconsultation is strongly preferred. Unless necessary for patient care, daily physical evaluations should be limited to one member of the primary team, and other encounters pursued via telemedicine whenever possible.

7. Routine testing at admission will include CBC with differential, CMP, COVID-19 and RPP testing, and portable CXR

8. Chest tomography and bronchoscopy are not indicated for screening or initial diagnosis. These tests may be considered under specific clinical circumstances, such as unexplained clinical deterioration.

9. Use of respiratory medications should be administered via meter-dosed inhalers (MDI) with spacer (when applicable) rather than by nebulizer to minimize aerosolized particles. If MDI is not available, medications can be administered using face mask. Hypertonic saline is not indicated.

10. Home regimen therapies for chronic patients: Suction only as needed to maintain patent airway. Limit all other airway clearance therapies until COVID-19 negative. Patient or family may administer home airway clearance therapy. BIPAP may only be used for sleep apnea.

11. Aerosol generating procedures (AGP), when absolutely necessary, require N95s or PAPRs be worn during the procedure. The definition of AGP will follow most current existing guidelines.

12. Avoid high-flow nasal cannula (HFNC, Vapotherm) in the Children's ED and during transport within the hospital to minimize aerosolized particles. Consider blood gas to assess for respiratory failure prior to starting HFNC. Place surgical mask on patient prior to initiation of HFNC and maintain throughout HFNC use.

13. No antiviral therapies are approved or proven effective in this clinical setting. Any clinical trial of antivirals, including non-trial compassionate use or off-label empiric treatment, will be determined by the primary attending of record in consultation with the infectious disease team.

Discharge Management

1. Patients with improving clinical status (hemodynamically stable without hypoxia or need for respiratory support and tolerating oral intake) may be discharged to home.

2. Specific instructions will be given to family for monitoring at home, including potential for deterioration after discharge. Contact information will be provided should the patients' clinical status worsen after discharge. Specific instructions will be given to families to reduce risk of transmission at home to themselves as well as other family members.

3. Tracing and contact of potential exposures will not be the responsibility of the hospital-based teams.

4. VUMC providers will contact PCP prior to patient discharge and send PCP eStar letter. We recommend that PCP follow up with patient by telephone within 1 week after discharge.

5. A member of the Pediatric Infectious Diseases team will follow up with patient by telephone or through a telemedicine encounter within 1 week after discharge.

Text for Letter to PCPs:
Your patient was diagnosed with COVID-19, caused by the SARS-CoV-2 virus. Most children recover fully from this infection and do not require special follow up care. Recurrence of fever, cough, shortness of breath, or other respiratory symptoms within the next week should prompt medical evaluation. According to the CDC, patients with COVID-19 should remain in home isolation until 3 days after resolution of fever and respiratory symptoms, and at least 7 days since symptoms first appeared. Therefore, please follow up with your patient by telephone within one week. With specific questions about the care of these patients, call 615-835-8088, which will connect you with the on-call provider for Pediatric Infectious Diseases.