COVID-19 Pediatric Inpatient Guideline, Version 1.7 April 27, 2020

Care of the Hospitalized Pediatric Patient with COVID-19

The purpose of this guideline is to provide providers of inpatient pediatric care within Alberta, where pediatric refers to ages 0-18 years, guidance for the basic care of patients with known or suspected COVID-19 infection to ensure such patients receive optimal, consistent and equitable care

Please recognize that:

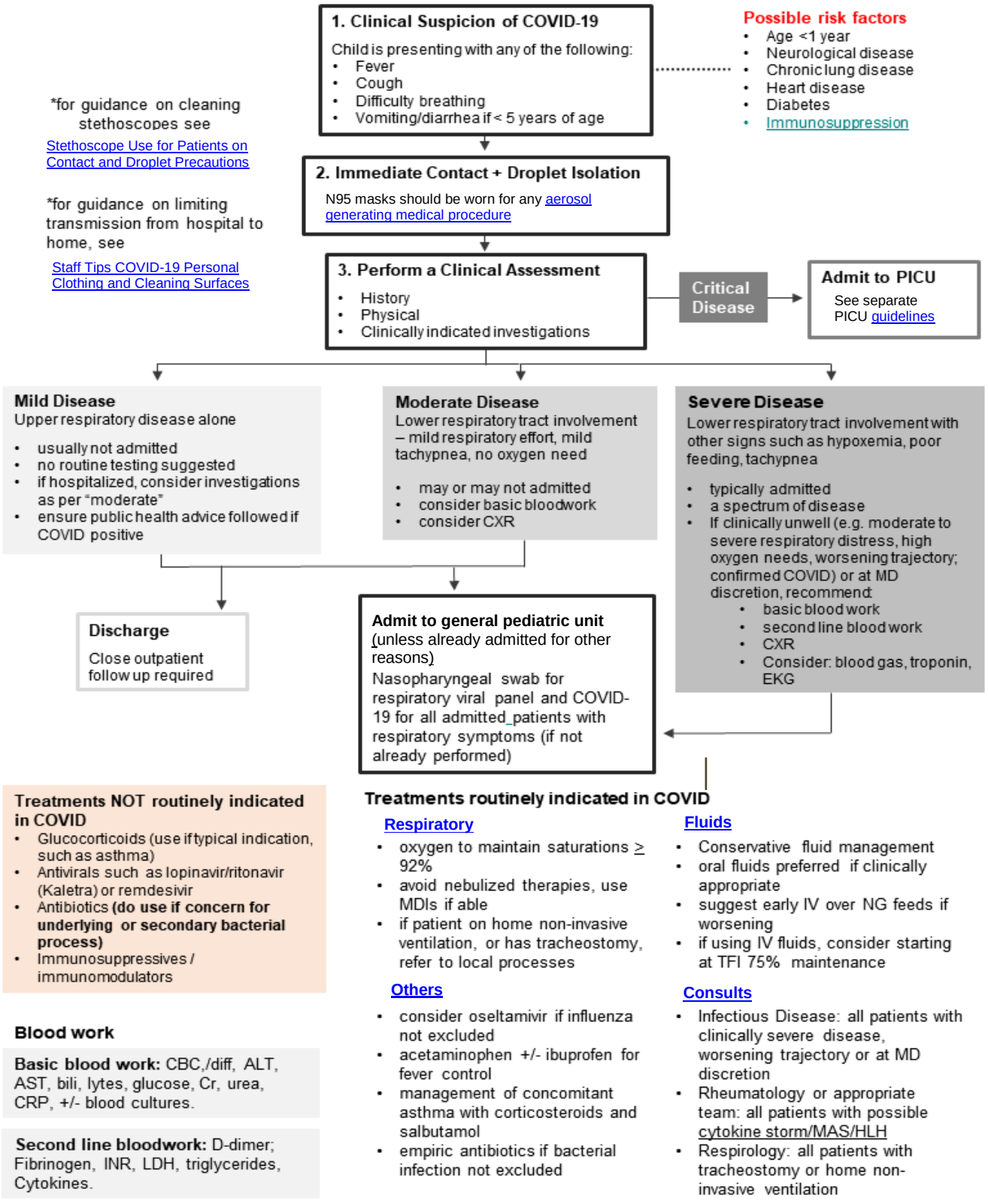
1. Application of the guidance in this document will need to be adapted to the characteristics of each individual unit, zone and department.
2. Research and guidance on COVID-19 surveillance, testing and management is being updated regularly.

This document has been developed by the Department of Pediatrics at the Alberta Children's Hospital, with input from the Sections of Hospital Pediatrics and Infectious Diseases and has been reviewed by stakeholders across the province.

This document does not provide recommendations for testing of patients with suspected COVID testing, infection prevention and control nor use of personal protective equipment as these are addressed elsewhere (links are provided).

A. Index

B. Patient Management Summary Algorithm



C. Background:

COVID-19 is the term for the clinical illness caused by the novel coronavirus SARS-CoV-2. In clinical practice the terms COVID-19, coronavirus, and SARS-CoV-2 are often used interchangeably.

COVID-19 is spread via direct contact and respiratory droplets. The concern that COVID-19 may be airborne is addressed here.

Whilst most COVID-19 cases (~80%) are mild, severe disease is common, with older age being an important predictor of disease severity. Children, from the limited data we have, have milder symptomatology than adults; approximately 5% will have dyspnea and 0.6% will require PICU admission[1]. Risk factors for disease progression in children are not clear, but at this point, the following may be considered: younger age (under 1), immunocompromised and underlying comorbidities such as heart disease, lung disease, neurological disease and diabetes mellitus[2,3].

The median incubation period is around 5 days with a likely range of 2-10 days. In contrast to influenza, severe disease progresses over several days: dyspnea or hypoxemia occurs about 6 days post exposure followed by deterioration, often in the form of respiratory failure, acute respiratory distress syndrome (ARDS), and/or sepsis about 10-14 days after exposure. Recovery typically takes 2 weeks for mild disease but may take 4-6 weeks for severe disease[4].

I. SIGNS AND SYMPTOMS

Signs and symptoms are similar to those of a typical Influenza-like Illness (ILI), with fever, cough and respiratory symptoms. Of note, younger children, particularly those under 5 years of age, may present with a predominant gastrointestinal illness, with complaints of vomiting or diarrhea.

See the next page for *Table 1: Classification of Severity of COVID-19 in Children*.

Table 1: Classification of severity of COVID-19 in children:

Note there is not yet consensus on this categorization; these are based on literature to date and guidelines for experimental treatments. It is recognized these categories do not match typical severities of ILI.

Mild Disease	• Upper respiratory symptoms (eg, pharyngeal congestion, sore throat, and fever) for a short duration or asymptomatic infection • Positive RT-PCR test for SARS-CoV-2 • May also include fatigue, myalgia, and gastrointestinal symptoms
Moderate Disease	• Clinical and/ or radiological signs of pneumonia on chest imaging • Symptoms such as fever, cough, fatigue, headache, and myalgia • No complications and manifestations related to severe conditions
Severe Disease	• Mild or moderate clinical features, plus any manifestations that suggest disease progression: o Worsening tachypnea o Hypoxemia (oxygen saturation less than 92 % on room air) o Altered level of consciousness, such as Irritability or lethargy o Dehydration, difficulty feeding, gastrointestinal dysfunction
Critical Disease	• Rapid disease progression, plus any other conditions: o Respiratory failure with need for mechanical ventilation (eg, ARDS, persistent hypoxia despite non-invasive oxygen supplementation) o Decreased level of consciousness, depression, coma, convulsions o Myocardial injury o Elevated liver enzymes o Coagulation dysfunction, rhabdomyolysis, and any other manifestations suggesting injuries to vital organs o Septic shock o Other evidence of organ failure

It should be noted that the host's response to COVID-19 seems important. Patients with more severe disease often display immune dysregulation and high inflammatory cytokines[5], often referred to as a "cytokine storm syndrome", resulting in a macrophage activation syndrome (MAS) or hemophagocytic lymphohistiocytosis (HLH) like clinical picture. Signs of this may include cytopenias, elevated ferritin, triglycerides, LDH and d-dimer. If this is suspected by the primary clinician, consultation with the appropriate service as per local referral practice is recommended. In some institutions this may be any of Rheumatology, ID, Hematology, Immunology or other.

II. DIAGNOSIS:

The diagnosis is made on clinical grounds and confirmed with laboratory testing documenting presence of SARS-CoV-2; chest imaging by CXR may identify or exclude some pulmonary complications, but CT chest is not routinely recommended in children.

There are no specific physical exam findings. Hypoxemia on pulse oximetry may be the only abnormality. The remainder of the exam may be normal: crackles, wheeze, or other pathological breath sounds if present could be due to a concomitant disorder.

Investigations are non-specific. Bloodwork in adults often demonstrates lymphopenia, but this is less common in pediatrics[6]. Laboratory markers of poor prognosis in adults include more severe lymphopenia, elevated d-Dimer, elevated LDH, elevated troponin, and elevated Sequential Organ Failure Assessment (SOFA) score in adults[2]. It is unknown if these findings have prognostic implications in pediatrics.

Co-infection with other respiratory viruses is common[7].

Most common imaging findings (though not required for diagnosis):

A. **Chest x-rays:** bilateral peripheral infiltrates most common, but these may be subtle early in the disease. Second most common is unilateral patchiness[6].

B. **CT chest*:** bilateral infiltrates with a ground-glass pattern sometimes with crazy paving; dense consolidation can also be seen[8-10]. Progression to typical ARDS patterns is typical for severe disease.

**note: CTs are not often used in pediatrics due to risks associated with ionizing radiation*

III. TREATMENT

Treatment is generally supportive.

Experimental anti-viral medications have been used in severe and critically ill disease. Supportive evidence for these is currently under investigation, and infectious disease consultation is strongly recommended for these experimental treatments.

Strict isolation precautions in keeping with AHS Respiratory Illness Isolation guidelines are to be maintained.

Fluids are an important consideration. Oral fluids are encouraged if clinically appropriate. In the deteriorating patient IV fluids over NG fluids should be considered given recommendations of earlier intubation in COVID-19 compared to other respiratory illnesses. Fluid management strategies should be in keeping with lung conservation strategies. If using IV fluids, consider limiting total fluid intake to 75% maintenance.

Antibiotics are not required for COVID-19 treatment, but their use should be considered empirically in severe disease until underlying bacterial etiology is ruled out, or if there is concern for a secondary bacterial pneumonia.

Antibiotic choice would be those recommended by current community acquired pneumonia (CAP) guidelines with recognition that it is not yet known which organisms are most likely to complicate COVID disease. Earlier use of ceftriaxone and azithromycin could be considered, and if the patient is not improving or is progressing the addition of vancomycin as per “severe CAP” is deemed reasonable.

The role of **antiviral and immunosuppressive agents** are currently not the standard of care, however can be used in consultation with appropriate subspecialists. Oseltamivir

(Tamiflu) should be considered if influenza is not excluded.

There have been multiple controversies, concerns, and experimental treatments discussed in the media. Briefly:

Controversies, Concerns and Experimental Treatments

a. Non-steroidal anti-inflammatory drugs (NSAIDs):

Controversy surrounding ibuprofen in patients positive for COVID-19 came after the Health Minister of France, and later the WHO, advised against the use of ibuprofen out of concern that it may worsen COVID-19 outcomes. The theory behind this is that SARS-CoV-2 enters the lungs via the ACE2 receptor, which can be increased with ibuprofen use[11]

However, there is no scientific evidence that establishes a link between ibuprofen, or other non-steroidal anti-inflammatory drugs (NSAIDs), and the worsening of COVID-19 symptoms per Health Canada[12]. The WHO updated their recommendation March 18, 2020 via Twitter to "Based on currently available information, WHO does not recommend against the use of ibuprofen".

Current advice from the Canadian Pediatric Society is that " there is no evidence that parents and clinicians caring for children over 6 months of age with suspected COVID-19 infection should avoid the use of ibuprofen for fever control".[13]

b. Angiotensin-converting enzyme (ACE) inhibitors:

Once again, theoretical concerns were raised because SARS-CoV-2 enters the lungs via ACE2, the expression of which is increased when the renin-aldosterone system is blocked. Additionally, it is known that patients with hypertension, diabetes and cardiovascular disease are at higher risk of severe disease; often these diseases are treated with ACE inhibitors[11].

However, there is not currently convincing evidence that patients on these medications have a higher risk of adverse outcome from COVID-19 infection.

Currently Hypertension Canada[14] and the Canadian Cardiovascular[15] society recommend continuing ACE inhibitors and ARBs for patients stabilized on one of these medications.

If there are concerns for a specific patient situation, please discuss with the prescriber of the ACE inhibitor or ARB.

c. Glucocorticoids

Glucocorticoids are not routinely recommended in the absence of other concomitant conditions.

d. Antivirals

To date, there is no proven therapy for COVID-19. Experimental treatments cannot currently be routinely recommended given equivocal data on benefit and emerging data on harm.

e. Immunosuppressants / Immunomodulators

In the context of the importance of the host response to COVID-19 and worse outcomes with an hyperinflammatory cytokine release picture, the role of

immunomodulators, including intravenous immunoglobulin has been considered. To date, there is no proven therapy for COVID-19. Experimental treatment use should be discussed with the appropriate subspecialty team, but cannot be routinely recommended given equivocal data on benefit.

D. Patient Management

At this time supportive and symptomatic care is the recommended treatment for patients with COVID-19 infections.

For patients presenting with an ILI where COVID-19 is one possible etiology, it is critical to recognize the high likelihood of more common viral and bacterial pathogens to underlie the patients presentation, even in the presence of exposure to COVID-19 infected individuals or relevant travel exposures. Additionally, asthma exacerbations commonly present with respiratory distress; it is not yet known how often COVID-19 is an inciting trigger. Investigations and treatments should ensure these other diagnostic probabilities are considered.

COVID-19 order sets for electronic medical records are/will be available for both Sunrise Clinical Manager (SCM) and Connect Care. Please consider using them to facilitate consistent patient care management.

I. Isolation

All patients should have contact and droplet isolation ordered, with N95 respirators utilized during aerosol generating medical procedures (AGMPs). Of note, collection of a nasopharyngeal swab, nasal suctioning, oropharyngeal suctioning and insertion of a nasopharyngeal airway are NOT considered AGMPs. There is no settling time required for AGMPs.

Patient room allocation should be considered in order from ideal to acceptable according to facility resources and potential/known need for AGMP: 1) negative pressure room with contained unshared bathroom facilities, negative pressure air handling and dedicated anteroom 2) single room, with the door closed, containing an unshared bathroom 3) a single room with the door closed (consider use of a commode). Information on patient placement for communicable diseases is found in the AHS IPC Acute Care Resource Manual here.

Geographical cohorting of patients is encouraged.

See separate IP&C and PPE guidelines and video. Note that any additional advice and precautions for Influenza should be followed for COVID-19 as well.

Transportation of the patient should be minimized.

If transport is required, specifics can be found in Section D of the Care of the Pediatric Critically Ill COVID-19 guideline.

II. Visitors

Visitor guidelines can be found on the COVID website.

In the event that both parents are symptomatic or otherwise unable to visit, discuss with

IP&C or the unit manager. In the event that a symptomatic caregiver is allowed to stay, strict isolation of that caregiver must be imposed by unit staff.

III. Investigations:

All patients admitted with a respiratory illness should have testing for COVID-19 and a respiratory viral panel. Testing processes (type of collection) as per AHS direction. If doing a nasopharyngeal swab directions on how to collect can be found here.

Further investigations are at the discretion of the treating physician. These may include some or all of those suggested below, particularly if unwell (eg risk factors for severe COVID-19, clinically unwell (eg moderate to severe respiratory distress, high oxygen needs), or worsening trajectory.

If COVID -19 is confirmed, suggestions based on disease severity include:

Mild Disease	• None typical • If hospitalized, consider those as per "moderate" disease
Moderate Disease	• Consider CXR* • Consider CBC, lytes, Cr, liver panel, LDH, ferritin, d-dimer, INR, triglycerides
Severe Disease	• Recommend CXR* • Recommend CBC, lytes, glucose urea, Cr, liver panel, LDH, ferritin, CRP, d-dimer, INR, triglycerides • Consider blood cultures, blood gas, cytokine panel** • Consider troponin • Consider EKG
Critical Disease	• As per severe disease • Consider echocardiogram

**CXR should be ordered portable to minimize patient transport. Diagnostic Imaging is supportive of increased use of portable x-rays during the COVID-19 pandemic.*

***Cytokine panel includes IL-1, IL-6, IL-10, IL-18, TNF alpha, CD 163, CXCL 9, and IFN gamma. Order in consultation with rheumatology if signs of early MAS/HLH.*

A CT scan is not routinely recommended; exposes patient to radiation and though a chest CT is more sensitive than a chest X-ray, the findings do not typically alter management

IV. Supportive care:

Cardiorespiratory monitoring is recommended for all patients with severe disease who are COVID positive, or at physician discretion. Of note, in COVID-19 patients, hypoxemia may be more severe than otherwise suggested on clinical exam.

V. Respiratory care:

- Oxygen should be provided when oxygen saturation ≤92% on room air. Goal saturation while on oxygen ≥ 92%.
- If oxygen demand is increasing, **consider early referral for mechanical ventilation (PICU consultation or RAAPID call)** as patient outcomes may be superior and planned intubations are at a lower risk for infection transmission than emergent ones.
- Nebulization (an AGMP) should be restricted when possible to reduce risk of viral transmission to health care providers. If needed, please use appropriate PPE including an N95 respirator
- Inhaled medications should preferentially be delivered via MDI with spacer when the desired drug is available in MDI formulation and when the patient's clinical status can tolerate this modality.
    - If the patient is on Heated Humidified High Flow Nasal Cannula Therapy (HHFNC) or non-invasive ventilation (NIV), inhaled medications should be delivered by an inline delivery system if possible, to minimize circuit disconnects and the release of aerosolized particles. Please discuss options with unit Respiratory Therapists
    - If patient is on HHFNC an MDI may be delivered with the HHFNC apparatus in situ.
    - Most patients on NIV on the inpatient unit generally have time off the equipment. Medications needing to be delivered by MDIs should be ordered such that they are delivered when patients are off NIV if possible. If there are challenges with this, please discuss with the unit Respiratory Therapy to determine best method of delivery.
- **Heated humidified high flow nasal cannula therapy (HHFNC):**
    - Aerosolization of respiratory secretions may result from HHFNC therapy devices. As such, it **should be avoided** when possible for routine use in patients where COVID-19 is suspected or confirmed. If used in pediatric patients with suspected or confirmed COVID-19 infection, treatment must be at minimum performed in a single patient room with the door closed and with staff using aerosol PPE precautions including use of N95 respirators.
    - HHFNC treatment may be required to manage sick patients not meeting criteria for intubation and mechanical ventilation in non-COVID cases. Current practice and use of HHFNC will not be restricted in this population.
- **Non-Invasive Ventilation (CPAP or BIPAP):**

- Non-invasive positive pressure ventilation (NIV) may result in aerosolization of respiratory secretions and thus is not recommended for routine use in patients with suspected or confirmed COVID-19.
- Patients will be admitted with confirmed or suspected COVID-19 who use home nocturnal NIV at baseline. In some of these cases, consideration may be given as to whether the patient could tolerate coming off usual home NIV for the duration of the admission (ie. on NIV for mild OSA). Respirology consultation recommended to help with this decision-making.
- NIV treatment must be at minimum performed in a single patient room with the door closed and with staff using aerosol PPE precautions including use of N95 respirators.
- Where possible, please consider admitting patients on home NIV to an ICU setting where full face masks, and filtered circuits can be used to mitigate AGMP exposure.

- **Patients with tracheostomy (with or without ventilator)**

  Tracheostomy care is considered an AGMP. The following guidance is advised:

  - Care should take place to deliver care in at minimum a single patient room using appropriate PPE, including an N95 respirator. Surgical masks are appropriate if influenza and COVID have been ruled out.
  - If available, patients with a tracheostomy (with or without a ventilator) may be preferentially admitted to a PICU-setting where they may be placed on a closed ventilator circuit and supported with inline suctioning.
  - If patient is not admitted to the PICU, tracheostomy tubes will NOT be routinely changed to cuffed trachs upon admission to the inpatient unit
  - If patient is not admitted to the PICU, provide cold nebulized/trach cradle as indicated and per current practice
  - Bronchodilator delivery should be provided via MDI and spacer. Nebulized medications should avoided.
  - If the patient is on a ventilator, minimize disconnects by using inline devices where possible. Please discuss with the unit Respiratory Therapist
  - **If any increased respiratory support is required, consult PICU (RAAPID if at a center without PICU) for admission.**
  - Respirology consultation recommended

VI. Fluids

Oral fluids should be considered for less severe cases. Early consideration for iv fluids over NG fluids and use of lung conservation strategies are recommended as per Section A III. above.

VII. Analgesics/antipyretics:

Acetaminophen and/or ibuprofen as needed.

VIII. Antimicrobials:

Oseltamivir (Tamiflu) should be considered if influenza has not been excluded.

Antibiotics, though not required for COVID-19 treatment, should be considered empirically in severe disease until underlying bacterial etiology is ruled out, or if there is concern for a secondary bacterial pneumonia. Further details in Section A III. above.

IX. Consults and Specific therapies for COVID-19:

As above, supportive care is the mainstay of COVID-19 treatment. To date, there is no proven therapy for COVID-19. Experimental treatments cannot be routinely recommended given equivocal data on benefit and emerging data on harm.

A PICU/RAAPID consultation is recommended for all patients with critical disease or those who are rapidly deteriorating. Earlier consultation is at the discretion of the treating physician with considerations of risk factors and patient trajectory.

Consultation with Pediatric Infectious Diseases is also recommended for critical and rapidly deteriorating patients. This consultation may be facilitated by RAAPID for Regional and community partners. If clinical trials for treatment of COVID-19 require earlier consultation, these criteria will be amended.

A referral to appropriate local team is recommended for patients with COVID-19 who demonstrate early signs of cytokine storm. These may include the presence of cytopenias, elevated ferritin, triglycerides, LDH and d-dimer.

X. Discharge:

Discharge criteria to consider:

- Afebrile > 24h
- No to mild respiratory distress
- No oxygen needed to maintain O2 saturations ≥92% (for COVID-19 positive patients; for other diagnoses/ viral illnesses refer to existing guidelines eg bronchiolitis)
- Maintaining hydration orally
- Not expecting worsening of symptoms based on illness progression and time course
- The family has been educated on appropriate actions to take should their child deteriorate after discharge

Provide the family with any or all of these resources/information:

- Alberta Health Services on Caring for a COVID-19 patient at home (available in multiple languages)
- Discharge pamphlet (in development)
- Any ongoing isolation requirements
- If in the Calgary area and in-person follow up is required, please preferentially refer to ACH Follow-Up clinic as outpatient pediatrician/family medicine offices may not

have sufficient PPE

E. Pediatric Hospital Medicine Inpatient Processes to Consider for Sites with Medical Trainees

1. During COVID-19 pandemic **Bedside Patient Care Rounding will cease** in order to limit the number of people in a patient room, as well as preserve PPE. Patient care rounds will occur as "round table" in a room that allows for adequate spacing between individuals. Number of individuals in the room may need to be limited in order to provide adequate social distancing. Consideration for team members to join virtually should be made (ie. for pharmacy, allied health, to call into the rounds room)
2. **Reduce clinically unnecessary entry into the room**.
3. When **in-person physician hand-offs** from one shift to another are being used, these **need to occur in a room that allows adequate social distancing** between members. To support this, anyone not actively involved in the hand-off should not be in the room.
4. If **written handover sheets** are used at your site**, consider documenting COVID-19 positive/ suspected /pending status** for quick reference for receiving medical team.
5. For **verbal communication** such as history-taking or daily progress inquiry, physicians may **consider telephoning into the patient room** from a landline hospital telephone to minimize contact time with the patient and family. Families (if they consent) may use their own cell phone or the in-room telephone to receive these calls. **Video call-in using zoom may be considered** if appropriate HIPPA requirements are met. Please document verbal consent by the patient/caregiver if any video platform is used.
6. **Passes for admitted patients are not permitted** during the pandemic. Please speak to the unit or site manager if there are specific cases to be considered.
7. During the pandemic, **no food is permitted in any patient care areas**. All food consumption should occur separately with appropriate hand-washing before and after.
8. To promote social distancing, **all in-person didactic teaching sessions have been cancelled** during the pandemic, but may be online.
9. **Medical students will not be permitted to care for patients with suspected or confirmed COVID-19 patients.** During the COVID-19 pandemic they have been pulled from clinical rotations. Junior residents (PGY-1) are able to provide care to patients with Influenza-like symptoms, but should refrain from providing care to COVID-19 positive cases. Senior residents are not restricted from providing care to suspected or confirmed COVID-19 cases.

F. Code Blue

Individual institutions may develop guidelines specific to their local context. Please refer to your local guideline if available. The link to the Provincial guideline on Care of the Critically Ill Pediatric Patient can be found here. General points related to initial response to a Code Blue include:

1. Staff responding to emergencies during a pandemic may not have adequate time to perform a thorough risk assessment.

   If the patient is on isolation precautions, Code Blue responders should don appropriate PPE before entering the room as indicated on the isolation sign.

   For patients with unknown COVID-19 status, resuscitation team staff should assume the patient may have COVID-19 and don all appropriate PPE for aerosol-generating medical procedures (N95 respirator, eye protection, gown and gloves).

   If possible, assigning a role of "PPE coach" will minimize donning time and ensure Health Care Worker safety. **Correct donning and doffing** are crucial steps and should be done carefully. This takes precedence over attending to the patient.

2. The code team response should be limited to those required. Others can remain outside as runners for further equipment or calling consultants as needed, but should not enter the room unless requested by a Code Team member.

3. Crash Cart location during a Code Blue will be determined by individual sites. Should the crash cart be brought into the patient's room, it must be appropriately decontaminated afterwards as per local protocols.

4. If breathing support required, use filtered bag valve mask (BVM) and achieve an adequate seal; two-person BVM technique is recommended *(flow-inflating BVMs come with a filter; self-inflating BVMs need a filter to be inserted).*
   If sufficient number of personnel trained in BVM are not yet present, place patient on a partial or non-rebreather mask if available using at least 15LPM of dry gas flow. If not available, use simple face mask at 10LPM flow.

5. If CPR is indicated, compression should be started as soon as possible; if sufficient staff are not present to support the airway/breathing using a filtered bag/mask apparatus and 2-person BVM, the patient should be placed on a partial non-rebreathing device at 15 LPM and compression-only CPR take place

6. If intubation is required:

   - Preference to do so in the most controlled environment (single room, airborne isolation with negative pressure if available; ideally in PICU if patient stable and at site with PICU) It is recognized this will not always be possible and optimal resuscitation including airway capture should not be delayed by this guidance.
   - The most experienced person should intubate
   - Pause CPR/compressions during intubation.
   - Cuffed endotracheal tube recommended.
   - Follow institutional guidelines for maintaining door closure during and post intubation, for further information and for guidance on transporting the patient to an intensive care environment.

Please refer to Local Code Blue guidelines for further detailed information.

G. Helpful Links:

COVID Antimicrobials: Antimicrobial Management of Pediatric Hospitalized Patients with COVID-19 – in process of provincial approval

General COVID info

- AHS COVID website (https://insite.albertahealthservices.ca/Tools/Page24291.aspx)
- COVID-19 FAQ for clinicians (https://www.albertahealthservices.ca/assets/info/ppih/if-ppih-ncov-2019-staff-faq.pdf)
- PHAC interim guidance (https://www.ammi.ca/Content/Clinical%20Care%20COVID-19%20Guidance%20FINAL%20April2%20ENGLISH%281%29.pdf)

IP&C general

- IP&C (https://www.albertahealthservices.ca/assets/healthinfo/ipc/hi-ipc-emerging-issues-ncov.pdf)
- Policy on visitors (https://www.albertahealthservices.ca/topics/Page17001.aspx)
- PPE (advice for influenza applies to COVID-19)
- PPE video

IP&C for staff

- How to protect yourself at home (https://www.albertahealthservices.ca/assets/info/ppih/if-ppih-covid-19-staff-tips-cloth-clean-z0-info-sht.pdf)
- How to clean a stethoscope (https://www.albertahealthservices.ca/assets/info/ppih/if-ppih-covid-19-stescope-cont-drop-prec-z0-info-sht.pdf)

For community

- Self-isolation (https://www.alberta.ca/self-isolation.aspx)
- Physical distancing (https://www.albertahealthservices.ca/topics/Page16997.aspx#social
- PHAC https://www.canada.ca/en/public-health/services/diseases/2019-novel-coronavirus-infection/health-professionals/interim-guidance-cases-contacts.html

Other

- Spectrum app (https://spectrum.app/)
  A mobile app customized to deliver local antimicrobial stewardship guidelines, resistance data, dosing information, and AHS COVID-19 related content
- Don't forget the bubbles (https://dontforgetthebubbles.com/evidence-summary-paediatric-covid-19-literature/)
  A website with pediatric COVID-19 studies compiled

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I. Other guidelines:

Recommendations for Antimicrobial Management of Adult Hospitalized Patients with COVID-19

Care of the Pediatric Critically Ill COVID-19 Patient Annex E

https://dontforgetthebubbles.com/evidence-summary-paediatric-covid-19-literature/