

Care of the Adult Suspected/Confirmed COVID-19/ILI Patient in the Emergency Department/Urgent Care Centre

Emergency Strategic Clinical Network

Note: This document is an adaptation of the [Care of ADULT Critically Ill COVID-19](#) document. The original document was developed by the Provincial Critical Care Communicable Disease Working Group and the Critical Care Strategic Clinical Network. This adaptation for use within the Emergency Department and/or Urgent Care Centre (ED/UCC) care area was coordinated by the Emergency Strategic Clinical Network with permission.

Intention for use:

- To guide all providers of ED/UCC care in Alberta as to the basic care of adult patients with known or suspected COVID-19 infection to ensure such patients receive optimal, consistent and equitable care throughout the ED/UCCs of Alberta
- Recognize that the application of the guidance in this document will need to be adapted to the characteristics of each individual site, zone and department.

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Questions or concerns with this document may be directed to Emergency.SCN@AHS.ca

Version	Author	Summary of Updates
April 15, 2020	Andrew Fisher, Manager, Emergency Strategic Clinical Network	Various link updates; Infection Prevention Precautions updated; changes in Medical Care section; Respiratory Care section updated to reflect current research and alignment with provincial guidelines; Addition of links to Staffing Considerations; Addition of sample intubation checklist;
May 21, 2020	Andrew Fisher, Manager, Emergency Strategic Clinical Network Dr, Brian Holroyd, Sr. Medical Director, Emergency Strategic Clinical Network	Added link to AGMP web reference; Added link to Goals of Care decision tool; Updated/added Handling Patient Care Items and Equipment ; Added Environmental Cleaning; Added reference to LPNs in staffing section; Minor updates to pre-triage/triage section; Updated Medical Care to reflect changes in COVID-19 swabbing; Respiratory Management section updated to reflect changes from Respiratory Health; Added Admission consideration to follow Provincial Pandemic Flowsheet; Added End-of-Life Care to Medical Care; Removed Preparation and Admission of COVID-19 Patients to ICU; Updated Code Blue Response; Patient Positioning added to Respiratory Care
August 17, 2020	Andrew Fisher, Manager, Emergency Strategic Clinical Network Dr, Brian Holroyd, Sr. Medical Director, Emergency Strategic Clinical Network	Updated to align with Care of the Adult Critically Ill COVID-19 Patient (July 13, 2020) Updated with latest IPC input.

A. Surveillance

Case Description for COVID-19

COVID-19 is an infectious syndrome caused by SARS-CoV-2, a novel coronavirus that was not previously detected in humans before December 2019. Though information is rapidly evolving, at this point it is noted that though the vast majority of patients have only mild symptoms, a small portion develop critical illness, in particular hypoxemic respiratory failure. In some cases there has been late cardiac decompensation, after hypoxic failure seems to be resolving. COVID-19 is believed to be primarily spread person-to-person via respiratory droplets and/or direct or indirect contact (e.g. contaminated hands to mucous membranes) similar to influenza, MERS, and SARS.

COVID-19/ILI Screening Criteria:

Click link to see the current updated screening criteria for COVID-19/ILI and GI symptoms:

<https://www.albertahealthservices.ca/assets/info/ppih/if-ppih-ncov-ed-ucc-triage-algorithm.pdf>

NOTE: This link is updated regularly and must be reviewed prior to every shift.

B. Facility Entrances, Pre-Screening and Triage

All sites shall ensure that appropriate signage (as indicated on the ECC Insite page <https://www.albertahealthservices.ca/topics/Page17000.aspx>) is posted for all patients and visitors entering the facility.

Dedicated staff for screening both patient and support person (designated as *patient* in remainder of document) and visitors prior to entering the ED/UCC are strongly encouraged to identify and triage patients who meet [COVID-19/Influenza-Like-Illness \(ILI\) and gastrointestinal \(GI\) symptoms screening criteria](#) if possible in the ED. Prescreening may be performed by RN, LPN, ACP, or PCP. Staff in pre-triage screening and in triage should maintain [contact and droplet precautions](#) (<https://www.albertahealthservices.ca/assets/healthinfo/ipc/hi-ipc-assmt-cntrs-covid-ppe-matrix-res-topics-z0-emerging-issues.pdf>). If ED registration staff are first point of contact, they should use appropriate personal protective equipment (PPE) and precautions. Refer to [IPC PPE Table for Emergency Departments and Urgent Care Centres during COVID-19](#). Always perform a Point of Care Risk Assessment to determine PPE requirements. Follow the AHS [continuous masking](#) protocol. Procedure/surgical mask and eye protection are recommended for personnel doing pre-screening.

All patients and visitors should immediately perform hand hygiene with alcohol-based hand rub (ABHR) before obtaining and apply a procedure/surgical mask prior to entry. Symptomatic patients should be moved to an appropriate treatment space or holding area for triage and care with consideration for appropriate physical distancing. All patients who cannot be screened (e.g. unconscious) should be considered positive until proven otherwise. All patients who screen negative for COVID-19/ILI will proceed to regular triage for further evaluation.

All visitors to the ED/UCC must also be screened for COVID-19/ILI symptoms. All symptomatic visitors will not be allowed within the ED/UCC. Check for updates on visitation rules on the [COVID-19 AHS webpage](#).

For sites not utilizing pre-triage screening, Contact and Droplet PPE shall be used by triage staff. Refer to [IPC PPE Table for Emergency Departments and Urgent Care Centres during COVID-19](#). Perform frequent hand hygiene. All patients and visitors should immediately use ABHR and apply a procedure/surgical mask. Cohorting decisions are site specific and staff will follow site processes.

Registration staff should also use PPE as per the [IPC PPE Table for Emergency Departments and Urgent Care Centres during COVID-19](#). Perform frequent hand hygiene between each patient interaction.

All patients shall also be screened for COVID-19 core ILI/respiratory and GI symptoms using the [COVID-19 expanded symptoms list](#). The [expanded symptoms](#) may be screened for post-triage by the primary nurse. During the patient's stay in ED/UCC, these initial symptoms should be recorded in the patient's electronic health record on Form #21616, and repeated at least every 12 hours.

C. General ED/UCC Logistics

1. Patient Area Supplies

- Use disposable supplies wherever possible
- Stock isolation cart with adequate supply of N95 respirators (all brands and sizes), goggles, face shields, gloves (all sizes), yellow isolation gowns, procedure/surgical masks and disinfectant wipes.
- Ensure canisters of disinfectant wipes inside and outside the patient room are adequately full. Liquid ready-to-use disinfectant with wipes may be substituted in case of supply disruptions. Refer to [Cleaning and Disinfection during the COVID-19 Pandemic: Addressing Disinfectant Supply Challenges](#) for details.
- Avoid overstocking rooms – only bring in supplies as required. Refer to [Management of Patient Supplies on Discharge or Transfer](#).
- Alert charge nurse/unit clerk ASAP if PPE supplies are low so that they can be ordered.
- ABHR will be available outside and inside patient rooms.
- Ensure garbage and laundry hamper are stationed inside patient room for doffing of PPE.

2. Equipment

- Where possible, equipment (e.g. BP cuffs, O₂ sat monitors) should be kept in the patient's room to avoid transmission via objects. Dedicate equipment (e.g. stethoscope, vitals monitor, etc.) to isolation room, or clean with hospital grade disinfectant after use prior to returning to general circulation.
- Review [Stethoscope Use for Patients on Contact and Droplet Precautions including COVID-19 Patients](#).
- Refer to Connect Care guidance document for equipment cleaning: [Connect Care Cleaning and Disinfecting of Mobile Electronic Devices](#)

3. Charting

- Do not take the paper chart or laboratory results into the patient room.
- Mobile computer terminals are to remain outside the patient room at all times unless a dedicated mobile terminal is available to remain in room (e.g. for units where dedicated mobile terminals are available for very sick patients requiring in-room presence of staff a majority of the time). Regular cleaning of computers/keyboards must be performed.
- Review [Nursing Practice and Documentation Efficiency During a Pandemic. Recommendations for COVID-19](#).

4. Diagnostic Imaging (DI) considerations:

- Follow site process for advance communication with DI prior to movement of any patient on Contact & Droplet precautions
- Symptomatic unwell patients will have all x-rays performed via portable means, where possible
- See [General Radiography Chest Imaging during COVID-19 Pandemic](#)

5. EMS Interface – see [Provincial Pre-Triage for COVID-19 for Adult and Pediatric Patients in Emergency Departments and Urgent Care Centres](#)

- EMS crews will screen patients for COVID-19/ILI prior to ED/UCC arrival
- EMS will contact receiving site to inform of any symptomatic patient prior to arrival to allow for space allocation and proper precautions
- Receiving ED/UCC will seek to accommodate symptomatic EMS patients in appropriate care space
- **NOTE:** For patients arriving via EMS who require CPR and do not yet have an advanced airway, EMS will continue with chest compressions alone as they enter the department. To minimize possible AGMP risk, the patient's mouth and nose must be covered by a mask, an article of clothing, or a blanket/sheet during the transfer for source control. Refer to the [AGMP Guidance Tool](#). *It is currently unresolved whether CPR alone (without bag valve masking) is considered an AGMP. Further guidance is expected in the future on this issue.

6. Meals: Used meal trays and dishes do not require special handling. Disposable dishes and utensils are not required.

7. **Visitors:**
 - See recommendations on visitation rules on the [COVID-19 AHS webpage](#).
 - Visitors must be asymptomatic and follow IPC recommendations
8. **Provincial ED/UCC COVID-19 Pandemic Surge Phases**
Refer to [AHS Provincial Emergency Department/Urgent Care Centre COVID-19 Pandemic Surge Phases](#) for direction/planning for potential surges.
9. **COVID-19 Triage Diversion Directive**
The [Directive: COVID-19 Triage Diversion](#) may be considered only under the strict conditions as outlined within the Directive. See also:
 - [COVID-19 Diversion Directive Background & Directions](#)
 - [AHS Provincial Emergency Department/Urgent Care Centre COVID-19 Pandemic Surge Phases](#)
 - [Diverted Patient Instructions - ED](#)
 - [Diverted Patient Instructions - UCC](#)

D. Infection Prevention Precautions

1. All ED/UCC AHS staff, contracted staff, and volunteers must follow the [IPC PPE Table for Emergency Departments and Urgent Care Centres during COVID-19](#) for current guidance and recommendations for PPE. (www.albertahealthservices.ca/assets/healthinfo/ipc/hi-ipc-emerg-dept-covid-ppe-matrix-res-topics-z0-emerging-issues.pdf)
2. Hand hygiene is critical to prevent the spread of all infections, including COVID-19. Special attention to hand hygiene is essential for staff, patients, and visitors. Wash hands with soap and water, or use ABHR before and after each and every contact with patients or the environment. Remind colleagues if you see lapses in hand hygiene behaviour. Educate patients and visitors about how and when to use hand hygiene products: <https://www.albertahealthservices.ca/assets/healthinfo/ipc/if-hp-ipc-flu-handwash-how-to.pdf>
3. Confirmed and suspected COVID-19/ILI/GI cases in the ED/UCC should be managed with Contact and Droplet precautions. Use N95 respirators for all aerosol-generating medical procedures (AGMP). Please refer to the [Aerosol-Generating Medical Procedure Guidance Tool](#) for the most complete list of AGMPs.

<https://www.albertahealthservices.ca/assets/healthinfo/ipc/hi-ipc-respiratory-additional-precautions-assessment.pdf>

For patients receiving any AGMP (e.g. High flow heated humidity oxygen therapy devices, NIV, tracheostomy with frequent suctioning) healthcare providers should wear N95 respirators and have the patient in an appropriate environment. In addition, due to the risk of disconnection of endotracheal tube and ventilator, healthcare providers should use N95 respirators when providing care to all intubated, presumed or confirmed, COVID-19 patients.

4. Staff directly engaged in patient care should maintain continuous use of masking as per <https://extranet.ahsnet.ca/teams/policydocuments/1/clp-ahs-use-of-masks-hcs-267.pdf>.
5. For patients with suspected but not confirmed COVID-19/ILI infection, maintain Contact and Droplet precautions including N95 respirators for AGMP and intubated patients.

Applying N95 respirators: Hold respirator in your hand and pull both elastic ties, bottom first, over your hand for ease of donning respirator. Test to ensure that respirator is secure and that there are no leaks. Discard immediately outside of room after use. If your site is participating in the N95 respirator recycling project, please follow local protocol.

Eye protection (disposable face shields/goggles): Face shields or goggles are to be worn upon entering the patient room. Personal eyewear (glasses) are not considered to be sufficiently protective. Consider the [reuse of disposable face shields](#). If disposing, discard face shields outside of the room/2m patient environment after use. If goggles are re-used they must be fully wiped down with disinfectant wipes prior to re-use.

Gloves: Always perform hand hygiene prior to putting on gloves and after removal.

Gowns: Remove lab coat before donning. Ensure the back of the gown is secured.

Donning: <https://www.albertahealthservices.ca/assets/Infofor/hp/if-hp-ipc-donning-ppe-poster.pdf>

Doffing: <https://www.albertahealthservices.ca/assets/Infofor/hp/if-hp-ipc-doffing-ppe-poster.pdf>. Be certain to clean hands after each step of doffing.

6. Effective and appropriate use of PPE will keep staff uniforms and clothing clean. Staff may prefer to change before leaving healthcare facility and take soiled clothing home in a bag. Soiled uniforms/clothing do not need any special handling in the laundry.

[Healthcare Attire Information Sheet](#)

[Staff Tips: COVID-19 Personal Clothing and Cleaning Surfaces](#)

E. Medical Care

Refer to [Stratification of ED/UCC patients presenting with symptoms consistent with COVID-19](#).

For suggested initial ED/UCC orders, see the [COVID-19 Evaluation & Management Adult ED/UCC Order Set](#).

At this time there are no specific proven treatments recommended for COVID-19 infections. Supportive and symptomatic care is important particularly for those with severe symptoms of COVID-19.

For patients presenting with ILI, where SARS-CoV-2 is one possible etiology, it is critical to recognize the high likelihood of more common viral and bacterial pathogens which may explain the patient's presentation, even in the presence of exposure to COVID-19-infected individuals or relevant travel exposures. Likewise, for patients with GI symptoms suspected of being due to COVID-19, appropriate investigations for GI causes should be performed.

Establishment of Goals of Care (GOC) designation should be pursued as early as possible; where GOC designation isn't available, use clinical judgment and facility practice.

See [Streamlined Goals of Care Designation decision-making for COVID-19](#).

1. Microbial Testing

Even in patients with proven COVID-19 infection, particularly in patients with severe disease, bacterial and/or other viral co-pathogens may be present.

All patients with evolving severe illness should be tested for the full spectrum of respiratory viruses (including SARS-CoV-2) and bacterial pathogens. This should include a nasopharyngeal swab and/or throat swab for the usual respiratory virus panel (in addition to SARS-CoV-2).

Refer to [Recommendations for Antimicrobial Management of Adult Hospitalized Patients with COVID-19](#).

Similarly, appropriate investigations should be ordered for patients with GI symptoms or suspected multi-inflammatory systemic condition (MIS-C).

2. Empiric Antimicrobial Therapy

Refer to [Recommendations for Antimicrobial Management of Adult Hospitalized Patients with COVID-19](#).

3. Imaging

Where clinically necessary, COVID-19 suspected cases should have chest x-ray performed. CT chest should be reserved for severe cases where the study can be used to guide or monitor management. Currently there are no pathognomonic imaging findings for COVID 19.

- See [General Radiography Chest Imaging during COVID-19 Pandemic](#)

4. COVID-19 Specific Antiviral Therapy

As of the date of this guideline, more data is being collected about antiviral agents with specific activity against SARS-CoV-2. There are numerous clinical trials underway in many countries and one expects new treatment information to evolve over time. It is important to check the current status of directed anti-viral therapies via AHS guidance:

[COVID-19 Scientific Advisory Group Rapid Response Brief: Remdesivir](#)

In addition, the following agencies may provide up to date guidance on anti-viral therapies:

- PHAC - <https://www.canada.ca/en/public-health/services/diseases/2019-novel-coronavirus-infection/health-professionals.html>
- WHO - <https://www.who.int/emergencies/diseases/novel-coronavirus-2019/technical-guidance/patient-management>
- CDC - <https://www.cdc.gov/coronavirus/2019-ncov/hcp/index.html>

Consultation with the local infectious disease service is recommended and suitability if participation in a clinical trial should be considered.

Refer to [Recommendations for Antimicrobial Management of Adult Hospitalized Patients with COVID-19](#).

6. Systemic Corticosteroids

Systemic corticosteroids for the treatment of viral pneumonia were previously not recommended. The RECOVERY trial has provided evidence (Dexamethasone in Hospitalized Patients with Covid-19 — Preliminary Report - from The RECOVERY Collaborative Group <https://www.nejm.org/doi/full/10.1056/NEJMoa2021436>) to support use of treatment with dexamethasone 6 mg delivered intravenously or enterally once daily for up to 10 days to reduce 28-day mortality in patients with COVID-19 who are receiving respiratory support. This recommendation is limited to patients who are receiving respiratory support (i.e., supplemental oxygen and/or invasive mechanical ventilation) with the greatest mortality benefit seen in those requiring invasive mechanical ventilation.

[Effect of Dexamethasone in Hospitalized Patients with COVID-19 – Preliminary Report](#).

"RECOVERY findings therefore support use of dexamethasone only for patients with hypoxaemia, not those with milder disease. The data do not support use of dexamethasone or other corticosteroids in the outpatient setting."

Johnson RM, Vinetz JM. Dexamethasone in the management of covid -19. *BMJ*. 2020;370:m2648. Published 2020 Jul 3. doi:10.1136/bmj.m2648 (www.bmj.com/content/370/bmj.m2648.long)

Emergency Department clinicians are encouraged to discuss specifics of their COVID-19 patient being admitted / transferred with the accepting consultant, regarding if dexamethasone is indicated for that specific patient.

Systemic steroids may also be of value for other clinical indications such as severe septic shock or ILI triggered asthmatic exacerbation.

7. Fluid Management

Use conservative fluid management in patients with COVID-19 when there is no evidence of significant dehydration. COVID-19 patients should be assessed for dehydration as fever may have increased fluid losses with decreased oral intake. Patients with COVID-19 should be treated cautiously with intravenous fluids because aggressive fluid resuscitation may worsen oxygenation. Hypotonic fluids, starches and albumin should generally be avoided. Euvolemia is the goal.

8. Admission

Consider following:

- [Stratification of ED/UCC patients presenting with symptoms consistent with COVID-19](#)

- [COVID-19 Provincial Pandemic Flowsheet Admission to Acute Care \(from ED, Assessment Centre or Observational Unit\)](#)

9. End of Life Care

For patients with M1, M2, C1 or C2 Goals of Care Designation where death is anticipated and symptom support is needed, alongside any medical management that might be continuing, consider following [Symptom Management for Adult Patients with COVID-19 Receiving End-of-Life Supportive Care Outside of ICU](#).

F. Respiratory Care

As there have been observations of hypoxemic COVID-19 patients with a profound absence of the typical signs or symptoms of respiratory distress, **all suspected or confirmed COVID-19 patients must have their oxygen saturation levels checked.**

For more detailed respiratory care refer to [Respiratory Management of Confirmed and Suspected Adult COVID-19 Patients](#).

The World Health organization (WHO) suggests that all respiratory care poses a potential risk during the COVID-19 pandemic. Staff should strictly adhere to hand hygiene protocol and ensure they use optimal donning and doffing technique of all PPE to reduce risk. Use N95 respirator and other appropriate PPE for AGMP as described in the link below.

NOTE please refer to the [Aerosol-Generating Medical Procedure Guidance Tool](#) to confirm the list of AGMPs.

The basic principles are to always use PPE as per the point of care risk assessment. For symptomatic/high risk patients, use Contact and Droplet precautions with the additional considerations (i.e. N95 respirator, patient placement) if an AGMP is to be performed. In addition to appropriate isolation precautions, and minimize the use of AGMP. Consider the following procedural Infection Prevention guidelines found here: <https://www.albertahealthservices.ca/assets/healthinfo/ipc/hi-ipc-respiratory-additional-precautions-assessment.pdf>

For Non-Intubated Patients:

- Oxygen therapy is often necessary for patients with COVID-19. If patient is hypoxemic and clinical judgement warrants, start oxygen administration. Maintain SpO2 target range at 92-96% or 88-92% in those at risk of hypercapnia (e.g. COPD) or 90-92% for acute coronary syndromes.
- Use dry oxygen; avoid humidification to reduce the risk of aerosolization and microbial spread.
- Select the least invasive oxygen therapy option that best meets the patient's needs. Patient's needs include maintaining the ordered SpO2 range, and ensuring optimum attainable patient comfort and work of breathing.
- Patients receiving oxygen by any type of nasal cannula should also be given a procedure mask to wear (if tolerated), so to reduce others' exposure to cough/sneeze droplet spread (especially during transport and in shared spaces). Low flow dry oxygen by nasal prongs is not considered an AGMP.
- Bronchodilator delivery via MDI via spacer is preferred if patients can effectively utilize.
- Nebulization should be avoided and be used only as an exception. [Memorandum: Restricted use of Nebulized Treatment for COVID-19](#)

Patient Positioning:

The Alberta Health Services COVID-19 Scientific Advisory Group has put forward the following:

Recommendations

The efficacy and safety of awake prone positioning of non-intubated COVID-19 patients with hypoxemic respiratory failure is not established and hence this practice is not recommended for routine application in this population of patients. Ongoing clinical trials (some of which are active in Alberta) should inform the best utility of this practice in the future.

Practical Considerations

1. If being considered for awake prone positioning outside of a clinical trial, COVID-19 patients should be assessed:
 - a. to determine their ability to communicate and co-operate with procedures, rotate to front and adjust position independently and to confirm an absence of anticipated airway issues.
 - b. to rule out absolute contraindications including respiratory distress (RR \geq 35, PaCO₂ \geq 48, accessory muscle use), immediate need for intubation, hemodynamic instability (SBP < 90mmHg) or arrhythmia, agitation or altered mental status, unstable spine/thoracic injury/recent abdominal surgery
 - c. to rule out relative contraindications: facial injury, neurological issues (e.g. frequent seizures), morbid obesity, pregnancy (2/3rd trimesters), pressure sores / ulcers
2. If awake prone positioning for COVID-19 patients is being considered for use outside of a clinical trial, health systems should be assessed to identify the required setting including equipment, staffing, and monitoring required.
3. If awake prone positioning for COVID-19 patients is being considered for use outside of critical care, a pathway should be developed to characterize required training, monitoring, documentation and outcomes measurement and include appropriate thresholds for discontinuation and escalation to the next level of care.

For more details, see [Rapid Review: Awake Prone Positioning for Non-intubated Patients](#)

Non-Invasive Ventilation (NIV; CPAP and BPAP/BILEVEL):

- Any form of NIV is an AGMP, and recommendations regarding its use in the COVID-19 pandemic are based on the considered balance of likely benefit of NIV to the patient, versus risk of AGMP and the resources consumed by the intervention (PPE, staff, and isolation rooms)

Heated Humidified High Flow Oxygen Therapy

- The use of heated humidified high flow oxygen therapy during the COVID-19 pandemic is controversial. There is some indication that it may offer value to individuals with early hypoxemia with staff using appropriate PPE (including N95 respirator), but is a very limited resource and creates the need for AGMP precautions where they would not otherwise be required. Definitive treatment with ventilation or intubation shouldn't be delayed for patients with R GOC; emergent and uncontrolled resuscitation poses increased risk to the patient as well as risk of aerosolized virus exposure to others
- Heated humidified high flow oxygen therapy may be used in the event that ventilator care is not available, or is delayed, so guidelines may need to be adjusted for future resource limitations. Contact and Droplet precautions with additional considerations for AGMP must be followed if used.

When to Consult Critical Care:

Patients with COVID-19 may decline rapidly and require careful monitoring (particularly their SpO₂). Intubation in a crisis is best avoided. Clinicians should consider consulting Critical Care service if ANY of the following criteria are met:

- Worsening hypoxia requiring greater than 6 LPM of oxygen continuously; **or**

- Severe respiratory distress, rapid deterioration in status, central cyanosis, shock, altered mental status, convulsions, or other worsening symptoms

Incentive Spirometry

It is strongly recommended that incentive spirometry not be used for patients that are suspected, probable or confirmed COVID-19. There is little or no evidence of effectiveness, and there is concern regarding risk of increasing viral particle release from the patient. Deep breathing and mobilization are effective alternatives.

When to Consider Intubation (R1 or R2 Goals of Care):

- Rapidly progressive oxygen needs and/or progressive respiratory distress, despite adequate oxygen.
- Clinical judgment is paramount.
- If time and situation permits, consult critical care for participation in patient management prior to intubation.

Ventilation with a bag valve mask, endotracheal intubation, and endotracheal suctioning are considered to be AGMP and appropriate PPE and IPC precautions shall be followed as per the [Aerosol-Generating Medical Procedure Guidance Tool](#).

For intubation procedure, see suggested guidance here: <https://insite.albertahealthservices.ca/Main/assets/ccmc/tms-ccmc-covid19-ilicovid-modifications.pdf>

Sample intubation checklist can be found in [Appendix](#)

If prolonged bag-valve-mask (BVM) ventilation is anticipated due to transport/transfer, consider frequent rotation of staff providing ventilations and diligence with appropriate PPE usage (i.e. N95 respirator, eye protection, gown, etc.).

G. 'Code Blue' response for COVID-19/ILI patients

(Summary per Provincial COVID-19 Code Blue Working Group)

Guiding Principles:

1. Minimize number of participants in the patient room during resuscitation
2. Minimize equipment in the room wherever possible.
3. Proper PPE (Contact and Droplet precautions, including a fit-tested N95 respirator) shall be donned prior to initiating resuscitation by all response team members, even if there is a perceived delay in resuscitation efforts.
4. Assume patient is COVID-19 positive, unless otherwise identified/known.
5. Routine procedures, such as defibrillation and CPR, are otherwise unchanged from non COVID-19 patients.
6. Pre-planning for Code situations is essential and should be done as part of site preparations. Communication methods between clinicians involved in the room and those outside should be considered.

For Code Blue response outside of the ED/UCC, current paging/notification processes should be followed. Upon arrival to the code, team members should quickly clarify roles and which members will be working inside versus outside the room.

- a. Ensure that PPE is readily available for responding team members. Since the availability of suitable PPE in sufficient quantities at the site of the arrest may not be guaranteed, the use of PPE pre-made kits should be considered, to travel with the response team or to be stored with code carts (where possible).
- b. Full CPR is an AGMP. Staff should adhere to Contact and Droplet precautions with a fit tested N95 respirator before commencing.
- c. Donning should be carried out quickly but meticulously, even if there is a perceived delay to resuscitation. If multiple individuals arrive at the same time, priority for donning and entering the room should be given to the Code Blue team leader and/or airway expert physician, and to the ICU/ED/UCC RN (assumes compressors are already in place with appropriate PPE)

Inside the room:

- Code cart with defibrillator and arrest drugs. If feasible and if sufficient clean carts are available on site, the code cart may be left just outside the patient's door and the defibrillator and medication drawer may be removed and passed into the patient's room.
- Intubation equipment:
 - Video laryngoscopy is highly recommended for the first attempt at intubation (where available).
 - Priority should be placed on intubation and obtaining a secure airway with closed ventilation, especially in an unresponsive patient.
 - If the patient has a supraglottic airway in situ, it should be changed to a cuffed endotracheal tube as soon as possible.
 - Manual resuscitation bag with a HEPA filter, capnography and inline suction placed between the mask/endotracheal tube and the bag
- Suggested response team members:
 - Code Blue Team Leader
 - Airway expert physician (if available)
 - RRT to assist with intubation and ventilation (if available)
 - RN to administer medications, cardioversion/defibrillation and update code blue team leader regarding changes in cardiac rhythm
 - RN/LPN to do CPR (1) – Usually first responder
 - RN/LPN to do CPR (2)
 - RN for documentation and time-keeping

Outside the room:

- RN/LPN "runner", to assist with supply of equipment and the activation of other HCWs, if required.

Modifications to ACLS in COVID-19 Patients:

- Intubate patients early and hold CPR during intubation to minimize aerosolization of particles and optimize intubation success.
- Manual BVM should be avoided if possible. If unsuccessful initial intubation, use two experienced practitioners to establish an intact seal, and minimize the risk of aerosolization.
- Avoid disconnections between the ETT and resuscitation bag. If disconnect is required due to gas trapping, the plan should be announced loudly in advance and the ETT should only be disconnected beyond the HEPA filter.

Post-Arrest:

- PPE Doffing: **DO NOT RUSH. BE METHODICAL.** Remove PPE slowly and carefully to avoid inadvertent contamination of yourself or others, performing hand hygiene in between each step while doffing.
- Team to decontaminate specialty equipment as per standard routines and IPC guidelines.
- Discard any opened supplies or any that cannot be cleaned appropriately.

Charting Considerations:

- Computer code narrator may be utilized with existing computers within the room or immediately outside the resuscitation room
- No portable computer devices should be brought into the room
- All efforts to maintain a clean paper chart should be taken
 - Paper is not a means of transmission. Handle all paper with clean hands; clean any shared items (like chart binders, pens or binders) with a low-level disinfectant wipe. See [IPC Interim Guidance for COVID-19](#).
- Where possible, recorder should not participate in any patient care delivery during a resuscitation
 - Recorder shall attempt to maintain a distance of two meters from the patient

H. Laboratory Testing

1. Diagnostic studies:

- a. **Nasopharyngeal Swab (NPS) or Throat Swab:** Collect swabs as per <https://www.albertahealthservices.ca/assets/wf/plab/wf-provlab-collection-of-nasopharyngeal-and-throat-swab.pdf> and send sample to lab. For throat swabs collected using saline transport medium, refer to <https://www.albertahealthservices.ca/assets/info/ppih/if-ppih-covid-19-saline-transport-medium-collection.pdf>. NP swab and throat swab specimen collection is not an AGMP.
 - b. **Endotracheal Tube Aspirate (ETA)/Expectorated sputum:** If ordered by Critical Care, collect ETA/sputum and place minimum 0.5-1 ml of secretions into sterile leak proof container. No additional transport medium is required. Mark sample as STAT. Order **both COVID-19 and Respiratory Virus Panel** for the same sample (only a single sample is required for all respiratory viral testing). Send sample to lab. **NOTE: this collection is considered to be an AGMP.**
2. The expected turn-around time for Provincial Laboratory reporting of the full respiratory virus panel including COVID-19 testing is <72 hours.
 3. Only one swab +/- ETA/sputum sample needs to be collected for both routine respiratory pathogen panel (RPP) testing and COVID-19 investigation. However, RPP must be ordered separately (i.e. there is no automatic add-on of RPP if COVID test is ordered).

I. Movement of Patient from ED/UCC

1. Contact receiving department prior to moving a suspected/confirmed COVID-19 patient.
2. All health care providers involved in transport must use appropriate isolation precautions. For intubated patients, staff involved in the transport should don N95 respirators with their PPE. Other AGMP should be held during transfer. In the absence of the above conditions, procedural/surgical masks should be worn.
3. Staff providing direct care during the transport should also don protective eye wear, masks, gown and gloves. Note: personal eye wear is not sufficient.
4. Hand hygiene should be performed before and after patient transport.
5. Wipe the handles of the bed before transport with disinfectant wipes. Where possible, designate one porter/assistant as 'clean' to open doors and touch elevator buttons.
6. Transport with minimum number of people necessary - registered nurse (RN), registered respiratory therapist (RRT), most responsible health practitioner (MRHP), and health care aide (HCA) as available and appropriate.
7. If patient intubated:
 - a. Transport using an in-line filter, in-line suction catheter and heat moisture exchange filter (HMEF).
 - b. Use of transport ventilators (with filtering systems) is preferred to minimize the need for hand bagging. If use of a transport ventilator is not possible, use a manual bagging unit (with PEEP valve).
 - c. Where available, RRT will manage airway and oxygen requirements.
 - d. Clean and disinfect transport ventilator after use and discard breathing circuit.
8. If patient not intubated:
 - a. Transport with non-humidified (dry) oxygen supply – respiratory (where available) to identify the most appropriate oxygen delivery mask.
 - b. Patients receiving oxygen by any type of nasal cannula should be given a procedure mask to wear.
9. Clean O₂ cylinder(s) and transport stretcher with disinfectant wipes before returning to general circulation.

J. Staffing Considerations

The principle is to minimize the number of staff involved directly with the patient with suspected or confirmed COVID-19/ILI while providing quality patient care.

1. The nurse in charge is responsible to determine patient assignment and will coordinate care of all patients in the unit with the principle in mind that the total number of staff caring for a COVID-19/ILI patient should be kept to a minimum. If possible, cohort staff so that RNs, LPNs, and RRTs caring for COVID-19/ILI patients are not caring for non-COVID-19 patients. Geographical cohorting of COVID-19/ILI patients may assist with staff assignments if appropriate to facilitate.
2. All members of the healthcare team, inclusive of Physicians, NPs, RNs, LPNs, RRTs, allied health, and support staff will continue to perform their usual duties. They must review and adhere to all appropriate isolation precautions prior to entering rooms.
3. Staff (including those who are pregnant, immunocompromised, or have underlying medical conditions) do not need to be restricted from providing care to patients who are under investigation for COVID-19, or who have probable or confirmed COVID-19/ILI, so long as the staff member is able to demonstrate proper use and fit of PPE, including donning and doffing, and can competently adhere to the IPC recommendations for COVID-19/ILI.

AHS Position Statement: [Pregnant Healthcare Workers and COVID-19](#)

AHS Position Statement: [Healthcare Workers with Underlying Medical Conditions and Potential Risk Factors for Severe COVID-19 Disease](#)

For students (medical or otherwise) working within an ED/UCC, please check with current site and educational institution guidelines for any restrictions to practice or exposures.

4. Individuals who are unable to competently adhere to the IPC recommendations for COVID-19 (e.g. skin condition that precludes proper hand hygiene practices; unable to wear N95 respirator due to approved religious beliefs that do not allow the individual to shave) should not provide care to patients who are under investigation for COVID-19, or those who have probable or confirmed COVID-19/ILI. Staff who are unable to be “Fit Tested for N95 respirators” should not care for COVID-19/ILI patients that are intubated or require any AGMP.

K. Handling Patient Care Items and Equipment

1. Use disposable patient equipment when possible.
2. Dedicate re-useable equipment for single-patient use only and until discharge.
3. If reusable equipment cannot be dedicated for a single patient use, clean and disinfect it between patients.
4. Additional precaution rooms should contain a dedicated linen bag; double bag only if leaking.
5. Do not share items that cannot be cleaned and disinfected.
6. Special handling of linen or waste is not required. General waste from patients on additional precautions is not biomedical waste.

L. Environmental Cleaning

1. Room surfaces and equipment cleaning/disinfection is required at least daily (or more frequently if directed by IPC) using AHS-approved products and procedures.
2. AHS approved disinfection products are effective against COVID-19.
3. After discharge, transfer or discontinuation of Contact and Droplet precautions, clean room as per existing facility cleaning practices.

4. Replace privacy curtains if visibly soiled.
5. Additional precaution signs should not be removed until both patient's personal hygiene and environmental cleaning have been completed.

[Enhanced Environmental Cleaning during COVID-19](#)

