

Frequently Asked Questions: COVID-19 in Operating Rooms and Surgical Services

These guidelines do not replace clinical judgement based on point of care risk assessments. The answers in this document are based on the current evidence available and are subject to revision as further evidence emerges.

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Suspected or Confirmed COVID-19 Patients

1. **UPDATED** As the percentage of the population with asymptomatic COVID-19 increases, at what point do we treat all AGMP procedures assuming the patient is suspected COVID-19?

As the number of COVID-positive patients in the community increases, we expect these measures to be used more widely. Alberta Health decides the threshold of community transmission at which we would consider “everyone” exposed (and, therefore, a suspect case).

2. **UPDATED** What criteria are used to determine a “suspected COVID-19” patient? Should every emergency case be considered COVID-19 positive until proven negative?

The "suspected COVID" definition has been established by AHS and is subject to change. The most up-to-date [Triage Screening Criteria](#) should be checked periodically for changes. Symptomatic patients may be tested; however, PPE and other IPC recommendations are the same for suspected and confirmed COVID-19. The screening tool does not replace clinical judgement, and the most responsible physician may discontinue COVID-19 precautions if there is a reasonable explanation for symptoms (e.g. fever related to appendicitis).

3. **UPDATED** Is there any value in swabbing urgent cases (e.g. E3 day facial fractures, head and neck cancers) or suspected COVID-19 patients 24 to 72 hours before surgery to determine the level of Personal Protective Equipment (PPE) required?

There is no role for pre-operative testing at this time. Nasopharyngeal swab results may be falsely negative, which may in turn lead to less stringent adherence to required precautions and use of PPE. PPE is based on the pre-operative risk assessment (i.e. COVID-19 screening criteria), which includes clinical symptoms and risk exposure criteria.

4. UPDATED Why are there inconsistent recommendations from the CDC, WHO, PHAC, and NHS, and what recommendations should be followed?

Scientific evidence is emerging rapidly and the epidemiology of the pandemic is quickly evolving. These guidelines are based on current recommendations from the WHO and PHAC and are subject to revision as further evidence emerges.

5. UPDATED What precautions should clinicians not involved in a case employ to limit their exposure if a suspected or confirmed COVID-19 patient is being treated elsewhere in the OR suite?

Staff not working in the COVID-19 OR should not enter the COVID-19 OR and should otherwise follow routine practices for IPC and the [AHS guidelines for continuous masking in healthcare settings](#).

6. Is there any consideration to implementing the guidelines other hospital systems have implemented?

A number of different sets of guidelines from various sources were reviewed in the development of the AHS recommendations.

Pre-operative/Procedure Considerations

7. UPDATED There are three types of patients coming into the hospital with emergencies that may not be related to COVID-19 (e.g. appendicitis or cholecystitis):

- **No symptoms and confirmed COVID-19 (not cleared of positive status)**
- **Symptomatic and confirmed COVID-19**
- **Symptomatic and awaiting test results (“suspected COVID-19 case”)**

Are these patients treated similarly for surgical procedures?

Yes, all three should be treated similarly with [COVID-19 appropriate PPE](#).

8. UPDATED Are procedures that aerosolize blood or tissue considered an AGMP for the purpose of PPE use? Is chest tube insertion an AGMP?

No. [AGMPs specific to the respiratory tract are relevant for COVID-19 and PPE use](#). Chest tube insertion, for example, is not an AGMP.

9. UPDATED If healthcare workers are experiencing symptoms, how and when can they get tested for COVID-19?

Current information about COVID-19, including work restriction and testing for staff, can be found [here](#).

10. How should students and interns be managed for a suspected or confirmed COVID-19 case?

Only required staff should be present in the COVID-19 OR during the surgical procedure. Discussion should occur prior to the case to determine if students and interns are required to be present.

11. UPDATED There is concern about ensuring the appropriate use of N95 respirators to maintain a sufficient supply. Are there risks to the availability of other PPE such as gowns, surgical masks, face shields, or gloves?

The PPE supply chain is being monitored by the Provincial Emergency Coordination Centre (ECC). Any updates about PPE supply and usage will be made by the Provincial ECC as recommended by the [AHS PPE Taskforce](#).

12. Are there extra precautions that staff who are pregnant or immunocompromised should be taking?

To protect the health and safety of these healthcare workers with respect to COVID-19, AHS has released the following position statements:

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

13. UPDATED Can verbal consent for procedures be obtained instead of written consent to reduce the need for signatures from patients?

Written consent is still required to be obtained as part of the consent process, following the [AHS Consent to Treatment/Procedures policy](#). Signed consent forms are not considered a vector for infection as charting materials, including consent forms, should be handled with clean hands.

PPE, Donning and Doffing

14. What are the correct donning and doffing procedures for PPE?

Donning and doffing posters specific to the OR are currently being developed. For proper OR donning and doffing procedures, staff should follow existing established OR guidelines including those for removal of contaminated gowns/OR gowns. A video specifically demonstrating OR donning and doffing procedures will be available shortly.

15. Is the use of coveralls or neck protection recommended for surgical staff during a suspected or confirmed COVID-19 case?

Coveralls and neck protection are not currently recommended due to the high risk of self-contamination during doffing.

16. UPDATED Are there recommendations on surgical staff taking a shower post-doffing of PPE?

No, not currently. The use of a doffing buddy is recommended as the risk of self-contamination seems to be greatest during doffing. Ensure that hand hygiene is performed between each step of PPE removal as indicated in the AHS doffing guidelines. In addition, as per usual OR practice, if there has been any concern for additional contamination of face and neck, additional washing may be considered.

17. UPDATED Can I bring my own personal PPE equipment to use in the OR?

The AHS PPE Task Force has provided guidance [to only use AHS provided PPE](#).

18. UPDATED Are there recommendations for special footwear to be worn for a suspected or confirmed COVID-19 case?

As per usual OR practices, anything below the knees is considered dirty. Only non-porous, wipeable footwear that is dedicated for OR use should be worn. Disposable shoe covers do not need to be worn.

Patient Transportation to the OR

19. UPDATED Will suspected or confirmed COVID-19 patients be transported directly to the OR rather than wait in a holding area? Does there need to be a protocol for transporting them from their unit to the OR and what PPE should be used for this transport?

Yes, the patient should bypass the holding area and be transported directly into the designated COVID-19 OR.

The patient may be transported to and from the OR by patient porter services. A team member or Protective Services should **clear the path** to the OR. **Staff & physicians should consider the following for patient transport to the OR:**

- Stable patients that will not require intervention (usually transported by a porter): routine practices including continuous masking with additional PPE as indicated by the IPC PCRA.
- Ventilated patient or unstable patient who may require intervention: gloves, surgical gown, head covering, N95 respirator, eye/face protection.
- **Note:** Mechanical ventilation is a closed system and is not considered an AGMP. Due to accidental disconnections that may occur during transport, an N95 respirator may be worn by those within a 2m radius.
- During transport:

- Non-ventilated patient must wear procedure mask (with ear loops).
- Ventilated patient does not require mask.

20. NEW Are there any special cleaning requirements for elevators after transport of a suspected or confirmed COVID-19 patient?

No, standard cleaning processes apply.

Anesthesia Induction

21. UPDATED For intubation during induction or any other Aerosol Generating Medical Procedure (AGMP), why is there no recommendation for completing procedures in a negative pressure environment as advised in the Centers for Disease Control document?

SARS-Coronavirus-2, the virus that causes COVID-19, is transmitted by respiratory droplets, and direct and indirect contact. It is [not an airborne infection](#).

22. UPDATED Why is there no "settle time" recommendation following intubation before other Operating Room (OR) staff can enter the room?

SARS-Coronavirus-2, the virus that causes COVID-19, is transmitted by respiratory droplets, and direct and indirect contact. It is [not an airborne infection](#), so no settle time is required post-AGMP.

23. UPDATED What is the protocol for patients undergoing intubation and extubation who are suspected or confirmed COVID-19? Should only the anesthesiologist and an assistant be in the room during this time, or will the scrub nurse also be in the room but well away from the intubation?

During induction, the anesthesiologist and an induction helper (respiratory therapist or nurse) and, if possible, a "clean" helper, should be the only personnel in the room. Each site should have a detailed airway management algorithm for the COVID-19 patient. Included in the airway management algorithm for the COVID-19 patient is the avoidance of bag mask ventilation, and the use of a videolaryngoscope (if available) for the first attempt by the most experienced provider.

24. UPDATED Is an N95 respirator still required once the patient is intubated?

Use of a N95 respirator should be considered if there is the potential for an anticipated or unanticipated [Aerosol Generating Medical Procedure](#) (AGMP).

25. Should we use intubation tents like some hospitals in other provinces or countries are using to try to contain aerosolization of COVID-19?

At this time the evidence suggests tents may not be safe as they may increase the viral load to which workers are exposed and, if not cleaned properly, would be a vector for spread to other patients or personnel. We do not want to reject innovation but urge innovations to be assessed and evaluated before advocating widespread use.

Surgical Procedures

26. UPDATED What is the difference between an AGMP and droplets expelled when someone coughs or sneezes? Are the PPE guidelines different for these situations?

Coughing and sneezing produce respiratory droplets ($> 5\mu\text{m}$) which fall to the ground quickly and, therefore, are transmitted over limited distance (up to 2m, usually less than 1m). AGMPs may produce aerosolized respiratory droplets that are $\leq 5\mu\text{m}$, however, these do not travel long distances for prolonged periods of time like the droplet nuclei of airborne viruses.

For pathogens transmitted by respiratory droplets, use gloves, gown, head covering*, surgical mask, and eye/face protection.

For certain respiratory pathogens, during AGMPs it is recommended to replace the surgical mask with an N95 respirator.

*NOTE: Head coverings are not required specific to COVID-19 or Contact/Droplet Precautions. Head covers are designed to confine shedding of the healthcare provider's hair and should be used in accordance with existing OR practices.

27. UPDATED Do all staff need to wear N95 respirators in the OR for a suspected or confirmed COVID-19 patient?

Yes, in the COVID-19 OR, an N95 respirator should be worn due to the risk of an unanticipated AGMP occurring during the case.

28. There are various levels of risk depending on a given procedure. Assuming a healthy patient with no risk factors:

- **What is the risk and recommendations for a thorough exam of the nose, oral cavity, and throat, including nasal endoscopy, in the clinic setting?**
- **What is the risk and recommendations for an operative procedure involving jet ventilation of the upper airway, or powered instrumentation of the nose or airway with the surgeon and staff being directly exposed to aerosolized smoke and secretions?**

- **What is the risk and recommendation if there is a long procedure with a tracheostomy, open oral cavity with sawing of bone, and significant amounts of aerosolization?**

These risks are currently unknown, but we recommend postponing all non-urgent examinations and procedures of this kind and wearing appropriate COVID-19 OR PPE if such a procedure is required in a patient with suspected or confirmed COVID-19 infection.

29. UPDATED When is it appropriate to use a powered air purifying respirator (PAPR)?

There is a statement about this from the AHS PPE Task Force: [PAPRs and CAPRs will not be deployed as PPE for COVID-19.](#)

30. UPDATED What is the appropriate PPE for AGMP and non-AGMP for suspected or confirmed COVID-19 patients in the OR? Will a list of AGMP be posted in the ORs or be made part of the Safe Surgical Checklist?

All team members working in the COVID-19 OR should wear the following regardless of whether the case includes a known AGMP or not, due to the risk of an unanticipated AGMP occurring:

- Gloves, surgical gown, N95 respirator, eye/face protection, head covering (as per routine OR practices)
- During doffing of face mask, the head covering may be captured and start coming off. If this occurs, remove and discard the surgical head covering and replace with a clean head covering.

The surgical team should use the opportunity during the Safe Surgical Checklist steps to review the particular risks associated with the patient and procedure including any [known or potential AGMPs](#).

31. UPDATED Can Bair Huggers (or other forced air warming devices) be used with suspected or COVID-19 patients?

Yes. Bair huggers do not create aerosols from the respiratory tract and are therefore safe to use.

32. Should masks (N95 respirator or regular surgical) be changed during the course of longer cases to maintain their effectiveness?

No. Your N95 should be put on at the start of the case and not adjusted or removed until either you or the patient have left the OR. There is currently no set time limit for the effectiveness of a mask. If the mask is touched or becomes wet or soiled, completely doff all PPE and re-don with clean PPE.

33. UPDATED Is a laparoscopic procedure considered to be an AGMP? Is there a risk for infection associated with blood or fluid from the peritoneal cavity?

Laparoscopic surgery is not considered an AGMP. All team members working in the COVID-19 OR should wear the following regardless of whether the case is laparoscopic or not due to the risk of an unanticipated AGMP occurring:

- Gloves, surgical gown, N95 respirator, eye/face protection, head covering

34. UPDATED Are there extra precautions or PPE required for staff in the OR during Craniofacial, OMFS, OHNS, Dentistry, or ENT procedures?

For patients who are suspected or confirmed COVID-19, all team members in the COVID-19 OR should wear the following due to anticipated and unanticipated AGMPs occurring:

- Gloves, surgical gown, N95 respirator, eye/face protection, head covering

For patients who have not tested positive for COVID-19 and are asymptomatic, a careful [Point of Care Risk Assessment \(PCRA\)](#) will be undertaken to screen for any COVID-19 symptom. Based on a negative PCRA, patients will be classified as non-COVID, and the procedure may be done in a non-COVID-19 OR.

35. NEW Are there extra precautions or PPE required for staff in the OR during orthopedic procedures using high speed drills and saws?

All team members working in the COVID-19 OR should wear the following due to the risk of an unanticipated AGMP occurring:

- Gloves, surgical gown, N95 respirator, eye/face protection, head covering

Currently, there is no concrete evidence that there is risk of COVID-19 virus transmission through these types of procedures and studies examining viral load in different human tissues suggest there is unlikely to be significant virus within bone, blood or serum.

36. Is there a COVID-19 designated OR at the site where I work?

Yes, every surgical suite with more than one OR will have one or more designated COVID-19 Operating Rooms (COVID-19 OR) with designated lead staff and a lead surgeon from each sub-specialty service. All procedures performed on suspected or confirmed COVID-19 patients should be carried out in a designated COVID-19 OR. Sites with only one theatre will not have a designated COVID-19 OR.

37. Are there any specific procedures for specimen handling from a patient who is suspected or confirmed to have COVID-19?

Yes. Please ensure specimens are appropriately labeled and contained if COVID-19 is suspected or confirmed.

38. Who can surgeons and anesthesiologists contact in the event they have questions regarding certain cases?

Contact your local site leadership.

39. What is the procedure in the event of a death in the OR of a patient who is suspected or confirmed COVID-19?

Normal procedures should be followed for the transport of remains containing potentially infectious agents.

40. UPDATED What is the guidance for paper charts or forms being brought into the OR during a suspected or confirmed COVID-19 case? Is the physical chart (with consent) to be left outside? If so, how should the briefing and timeout be performed, and should charting be completed after the case? How should charts and forms that were used in the COVID-OR be cleaned and stored?

It is recommended that only the most essential paperwork be brought into the COVID19-OR. Charting materials, including consent forms, should be handled with clean hands. The laminated checklist should remain in the OR and be cleaned between cases.

41. Are there recommendations on limiting the number of frozen sections requested to only those that will change the course of a patient's treatment or surgery performed?

Yes, frozen section should only be used when absolutely necessary to guide intra-operative management.

42. Is there specific guidance for PPE use when a C-section is being performed on a patient who is suspected or confirmed COVID-19?

- The patient should wear a surgical mask throughout procedure.
- Team members should wear gloves, surgical gown, surgical mask (with ties), eye/face protection, and head covering.
- An N95 respirator is not required. However, if there is a potential for rapid conversion to general anesthesia, an N95 respirator should be worn.

43. UPDATED How should we handle blood products in the COVID-19 ORs?

- Do not bring the blood product coolers into the COVID-19 OR theatres. Runner hands in only the products to be infused.
- Blood products should be checked as per usual policy and process.
- If, for any reason, a cooler is brought into the theater, the exterior of the cooler should be wiped with the standard Accel or Kim wipes. **DO NOT** clean the inner coolant rings (phase change material). Blood bank will disinfect the phase change materials upon return.
- Return unused blood product to the Blood Bank.
- **DO NOT** wipe products (due to gas permeability) – the lab would have to discard products that had been wiped with cleaning products.
- **DO NOT** discard any unused blood product (transmission is considered low risk; do not want to waste valuable blood product).

Recovery of the Patient

44. UPDATED In the operating room, when a recovery room nurse is caring for an already extubated suspected or confirmed COVID-19 patient, should they be

wearing PPE with an N95 respirator or PPE with a surgical mask?

In this situation they should be wearing PPE with gown, gloves, surgical mask and eye protection. An N95 respirator may be worn if there is the risk of a potential AGMP occurring.

45. UPDATED What is the recommended process for safest transport of suspected or confirmed COVID-19 patients to the inpatient unit and to the ICU?

Transport to inpatient unit: Patient will be transported by patient transport services from the dedicated COVID-19 OR directly to their inpatient room.

Transport to the Intensive Care Unit (ICU):

- Ensure a tight connection between all elements of the circuit to reduce the risk of disconnection.
- Ideally, clean PPE is worn for transport from the OR to the ICU. This can be achieved by the COVID-19 OR team doffing used PPE and donning clean PPE, or by use of a separate team with newly donned PPE. Note that repeated doffing increases the risk of an exposure due to a doffing breach/error.
- If neither of these options are possible then the anesthesiologist and respiratory therapist from the OR may transport the patient to the ICU and remain in their existing PPE. A team member should **clear the path**.
- All individuals on transport should wear PPE (including a respirator) as there is a possibility of a circuit disconnect.
- Once hand over is complete, members of the team can complete the doffing procedure.

It is essential to ensure that the proper [doffing](#) process for PPE is followed. Use of a doffing checklist with a doffing buddy is highly recommended.

Cleaning Post-procedure

46. What happens to the OR theatre after a suspected or confirmed COVID-19 patient undergoes surgery? Is it cleaned and kept empty for a few hours before the next case?

The usual environmental cleaning processes between cases should be followed by Environmental Services or OR service workers. Extra time is not required between cases. Computer touch screens and keyboards in the OR theatre should be cleaned between cases. This is currently the responsibility of the end user (i.e., not Environmental Services or OR service workers).

47. UPDATED Are there different PPE recommendations for Environmental Services staff to follow when cleaning the OR after a case with a suspected or confirmed COVID-19 patient?

No. Rooms should be cleaned after the patient leaves by staff wearing PPE including surgical or procedure mask, eye/face protection, gown, and gloves.