**MUHC Algorithm for Management of patients in the operating room and case room in the context of the COVID-19 pandemic- April 29, 2020 (Version 8)** *These recommendations may change as the pandemic evolves.*

*Note: Each case should be planned by the entire OR team prior to sending for the patient.* *For scheduled surgery, this discussion should take place the day before. This is a guideline and not a replacement for clinical judgement for specific cases.*

For scheduled surgery, patients are required to **self-isolate** at home until their surgery.

**All patients should be carefully screened** for contact with persons infected or under investigation for COVID-19 in the past 14 days (including residence in CHSLD, acute care hospitalization, household contact), and for any COVID-19 symptoms in the past 14 days (see Appendix A for screening checklist). This will be determined one week and one day prior to surgery via telephone call and confirmed at presentation to hospital (for scheduled patients) or at the time of surgical consultation (for emergency patients). This checklist should be re-confirmed at surgical time-out with the patient. **Patients with contact and/or symptoms must be tested for COVID-19 and surgery delayed, if feasible.** In case of a positive test result, surgery should be postponed (unless life or limb threatening) due to the risk of perioperative respiratory morbidity and exposure to the health care team.

Patients will undergo preoperative PT-PCR COVID screening within 24 hours of scheduled surgery. Note that the value of a negative test done more than 24h preop is unknown (false negatives). Patients with symptoms possibly related to COVID and/or contact should be considered at risk and remain under precautions during hospitalization.

Patients coming to the OR will wear a procedure mask. Members of the health care team working within 2 metres of patients will also wear a procedure mask.

Based on the above and procedure type\*,follow the algorithm below.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Clinical Evaluation | Patient with symptoms of COVID-19 and COVID test positive or pending | | Patient without symptoms of COVID but with significant contact in past 14 days with person infected with COVID or under investigation  or  Patient with symptoms possibly related to COVID and test negative x1 | | Patient without symptoms of COVID and physical distancing x 14 days and no contact with person infected with COVID or under investigation  or  Patient without symptoms or contact and test negative (if done and within 24 hours) | |
| Risk for COVID | Confirmed or high risk for COVID | | Intermediate risk for COVID | | Low risk for COVID | |
| Aerosol risk of surgery | High risk \* | Low risk | High risk \* | Low risk | High risk \* | Low risk |
| Room | COVID OR | COVID OR | COVID OR | Regular OR | Regular OR | Regular OR |
| PPE† | A/C/D precautions for all OR staff | A/C/D precautions for team performing AGMP including intubation and extubation  For other OR staff (if can leave room during intubation and enter after delay\*\*): C/D precautions; If cannot leave: A/C/D precautions for all OR staff  If neuraxial or regional anesthesia and low risk for bagging or intubation: C/D precautions for all OR staff; patient wearing procedure mask  If the patient already intubated: C/D precautions unless risk of accidental disconnection of circuit (eg prone position), in which case A/C/D precautions for all | A/C/D precautions for all OR staff | A/C/D precautions for team performing AGMP including intubation and extubation  For other OR staff (if can leave room during intubation and enter after delay\*\*): C/D precautions; If cannot leave: A/C/D precautions for all OR staff  If neuraxial or regional anesthesia and low risk for bagging or intubation: C/D precautions for all OR staff; patient wearing procedure mask  If the patient already intubated: C/D precautions unless risk of accidental disconnection of circuit (eg prone position), in which case A/C/D precautions for all | Airway team may use A/C/D precautions due to proximity  Other OR staff: Standard protective practices; consider ocular protection depending on type of surgery | Airway team may use A/C/D precautions due to proximity  Other OR staff: Standard protective practices |
| Airway | Minimize number of personnel in the room during intubation and extubation  Delay\*\* after intubation and extubation prior to entry of rest of OR team unless precluded by clinical urgency | | | | No delay necessary; routine practice | |
| Transfer | Transport intubated patients using A/C/D precautions  Transport extubated patients using C/D precautions; patient wears procedure mask | | | | Follow usual practices | |
| Recovery | If ICU patient: recover in the ICU  If ward patient: recover in NPR in PACU | | If ICU patient: recover in the ICU  If ward patient: PACU under C/D precautions | | Usual ICU and PACU care | |
| Admission | ICU in NPR or COVID ward under C/D precautions | | Surgical ward under C/D precautions | | Surgical ward under usual precautions | |

**\*Surgery and procedures at high risk for aerosol generation:** Surgery on the lung, nasopharynx, oropharynx, trachea, trans-sphenoidal and transoral, open bowel mucosa, any procedure requiring gastroscopy or bronchoscopy. Note that in a paralyzed and intubated patient, it is unlikely that transesophageal echocardiogram generates significant aerosol. For laparoscopic surgery: use closed filtration system during case and for evacuation of pneumoperitoneum (See CAGS statement: “Laparoscopy and risk of aerosolization”).

†**PPE**: Personal Protective Equipment:

* A/C/D = Airborne, contact and droplets: gloves, long-sleeved gown, face shield, fit-tested n95 respirator
* C/D = Contact and Droplets: gloves, long-sleeved gown, mask with visor

**\*\*Delay:** amount of time to allow sufficient air exchanges to reduce aerosols(20 minutes at RVH/MCH/Shriners and 35 minutes for MGH/MNH)

**AGMP**: Aerosol generating medical procedure (Appendix B) Note that intubation under controlled OR conditions is considered low risk for aerosolization; **COVID-OR**: designated operating room (OR) with negative pressure antechamber (SAS) and positive pressure OR, to operate on COVID-19 positive patients, symptomatic patients, and selected high risk asymptomatic patients. RVH rooms 12 and 13; MGH Rooms A and B; **NPR**: negative pressure room

Appendix A

Modified from “Admission Screening Form for Inter establishment transfers” (<https://www.mymuhc.muhc.mcgill.ca/employee-toolbox/infection-control/coronavirus-2019-covid-19/documents/formulaire-de-controle-des>)

1. Does the patient have any of the following symptoms in the last 14 days:

* Fever, chills or history of fever
* Cough
* Shortness of breath / respiratory difficulties
* Sore throat
* Rhinorrhea with nasal congestion
* Myalgia / arthralgia
* New onset headache
* Acute loss of smell
* Syncope / prostration
* New onset diarrhea or vomiting

1. Has the patient had a contact with a COVID-19 case in the last 14 days
2. Has the patient travelled in the past 14 days
3. Has the patient had a contact with someone with a respiratory tract infection in the last 14 days (such as a cold, pneumonia, etc)
4. Is the patient a resident in a CHSLD or seniors’ home?
5. Is the patient being transferred from another hospital where there is an outbreak of COVID-19?
6. Has the patient been hospitalized in the past 14 days?

**If answer of yes to any of the above -> patient should be in contract/droplet precautions and tested for COVID**

Appendix B

**Aerosol generating procedures: AGMPs** (**MUHC Covid-19 Infection Control Management and Prevention of Transmission-** March 27th 2020; updated April 7 2020).

* Intubating a patient
* Extubating a patient
* Non-invasive ventilation (includes supplemental oxygen via facemask (ventimask), high-flow supplemental oxygen(optiflow), positive pressure ventilation (likeBiPAP and CPAP)
* Tracheotomy and tracheotomy care
* Cardiopulmonary resuscitation
* Manual ventilation (bagging) before intubation
* Bronchoscopy
* Laryngoscopy
* Open circuit suctioning in intubated patients
* Nebulization
* Sputum induction
* High frequency oscillatory ventilation (high rateup to 900 cycles per minutes)
* Upper gastrointestinal endoscopy
* Dental procedures involving use of high-velocity drill