

## Interim Obstetric Anesthesia Guidelines for Pregnant Women and COVID-19 Winnipeg Regional Health Authority and Shared Health

These Guidelines are based on recommendations from the Society of Obstetric Anesthesia and Perinatology, the Society of Obstetricians and Gynaecologists of Canada, Obstetric Anaesthetists Association UK, as well as information on measures being taken by maternity units around the country. As information becomes updated, these guidelines may be subject to alteration.  
(Draft No. 6, July 9, 2020)

**Definitions: For the purpose of this document, definitions are used in accordance with Shared Health.**

**COVID-Non-suspect (green zone patient)** are patients who do not meet criteria for testing AND/OR those deemed “recovered” by Public Health or by Infection Prevention and Control (if an inpatient)

**COVID-Suspect (orange zone patient)** are patients who meet criteria for COVID-19 testing OR as deemed by clinician judgment. In general these patients should be referred for testing or are patients who have been tested and the results are pending (*with the exception of patients awaiting results from voluntary asymptomatic COVID testing. See below.*)

**COVID-Positive (red zone patient)** are patients who have been tested and have a positive test result AND who have not been deemed “recovered” by Public Health or by Infection Prevention and Control (if an inpatient).

**Please also refer to the Shared Health website regarding PPE in Acute Care settings and criteria for COVID testing.**

<https://sharedhealthmb.ca/files/covid-19-ppe-table-acute-sub-acute.pdf>

<https://sharedhealthmb.ca/files/covid-19-updated-testing-criteria-may-13.pdf>

- Asymptomatic COVID-19 Screening of Obstetrical patients:
  - Asymptomatic screening for COVID-19 should be offered to pregnant patients being admitted for labour and delivery
  - The test is voluntary for asymptomatic patients
  - A patient’s zone designation is not altered while results from an asymptomatic test are pending
- Suspect (orange zone) or positive (red zone) patients are to wear a procedure mask when being moved around the hospital (NOT an N95 mask).
- If possible, a labour room should be designated for suspect or confirmed COVID-19 patients. An airborne infection isolation room is not required. Patients should be admitted to this room and the door kept closed.

- For labouring patients, epidural analgesia is recommended, barring any contraindications. Early epidural is advisable and may reduce the need for a general anesthetic for emergent cesarean delivery. **It is advisable to ensure a well-functioning epidural, and to maintain communication with the obstetrical and nursing teams to anticipate emergencies and avoid any crash cesarean sections, particularly under general anesthesia.**
- The epidural cart should be kept outside the room of orange and red patients, with only the items required for the procedure brought into the room.
- Nitrous oxide may be used for labour analgesia for any patient who requests it, regardless of their zone designation. A N95 (or higher) filter should be used on nitrous tanks. *NB – this represents a change in practice since the outset of the pandemic. The use of nitrous oxide had temporarily been suspended early in the pandemic while further information about transmission was being acquired. Given that there is no positive pressure involved in the nitrous oxide delivery system used on labour units, this form of analgesia is not considered an aerosol generating medical procedure. As such, the staff in the room need no additional PPE beyond what is routinely recommended (determined by patient zone). This recommendation applies to patients of all zones and regardless of type of exhaust scavenging system available on the laboring unit.*
- If possible, an operating room, preferably a negative pressure room, can be designated as a room for COVID-19 positive or suspect cases.
- The Anesthetic machine should be prepared with N99 filters on both limbs and a closed suction on the circuit. In-line suctioning should be available.
- A videolaryngoscope should be immediately available and should be used if an orange or red zone patient requires endotracheal intubation.
- A COVID drug kit or cart that contains all routine drugs and airway equipment should be made available, so as to avoid contaminating the entire drug cart and minimizing traffic in the room.
- A PPE cart should be kept immediately outside the operating room. It should NOT be taken into the operating room or any other room.
- Neuraxial block is appropriate in patients with COVID-19 and should be used, provided not otherwise contraindicated.
- General anesthesia should be avoided if at all possible, to avoid intubation and aerosolization of the virus.
- A team huddle before the case should occur before entry into the operating room if possible. The team huddle is to outline staff roles (including assigning the assistant to anesthesia should conversion to GA occur), review PPE requirements, and to discuss anticipated need for any equipment or medication that needs to be brought in before any AGMP occurs. PPE for all staff members should follow Shared Health/WRHA/IP&C recommendations. Anesthesia will lead the briefing.
- Donning PPE is time consuming (when done properly it takes approximately 2 minutes) and will impact on decision to delivery time for STAT cesarean delivery
- Precautions outlined with intubation for any COVID-19 patient should be undertaken. Minimal staff (only essential personnel) should be present during both intubation and extubation.

**Personal Protective Equipment for Obstetric Patients During COVID-19 Pandemic:**

<b><u>Clinical Encounter</u></b>	<b>GREEN ZONE</b>	<b>ORANGE ZONE</b>	<b>RED ZONE</b>
Epidural Insertion	Routine Care plus eye protection	EDCP (Surgical mask)	EDCP (Surgical mask)
Vaginal Delivery	Routine Care plus eye protection	EDCP (Surgical mask)	EDCP (Surgical mask)
Cesarean Section with Regional anesthesia and <b>low risk</b> of conversion to GA	Routine OR plus eye protection	EDCP (Surgical mask)	EDCP (Surgical mask)
Cesarean Section with <b>high-risk</b> of conversion to general anesthetic - Concern for inadequacy of epidural top-up - Insufficient time for epidural top-up - Inadequate spinal block - Concern for massive intraoperative blood loss (>1.5L) - Transverse fetal lie	Routine OR plus Eye protection	EDCP plus N95 mask for core surgical team (anesthesia, assistant, obstetrician, scrub nurse)	EDCP plus N95 mask for core surgical team (anesthesia, assistant, obstetrician, scrub nurse)
Cesarean Section with General Anesthesia	Routine OR plus Eye Protection	EDCP plus N95	EDCP plus N95
Newborn Resuscitation in LDR or Operating Room <b>for any mode of delivery or anesthetic</b> for orange or red zone patient with ONE OF: 1) respiratory symptoms requiring oxygen, ventilatory, or hemodynamic support 2) immunocompromised	Routine OR plus Eye Protection	EDCP plus N95 mask (vertical transmission concerns – see text)	EDCP plus N95 mask (vertical transmission concerns – see text)

- **For orange or red patients, regardless of the type of anesthesia, partners are asked not to enter the OR for Cesarean Section**

- For all personnel who are not immediately involved in the surgery, EDCP with surgical mask can be used at the outset of the case. **If the patient is converted to GA, any staff not wearing an N95 mask must exit the room prior to intubation, and doff and don with an N95 before re-entry. Every attempt should be made to re-enter PRIOR to the intubation to avoid opening the door to the operating theatre following the AGMP.**
- **If a GA occurs for an Orange or Red Zone patient, the doors should not be opened within 30 minutes\* of the AGMP, the only exception being for transfer of the infant to the care of the neonatal team. (\*There is variation in the province with regards to the amount of air exchanges per hour in operating rooms. The time for door opening after an AGMP can be decreased to 15 minutes for facilities with air exchanges of 20 per hour.)**
- If the case begins with a general anesthetic for an orange or red zone patient, all staff that are required to be in the room for the case should be present during intubation to minimize the doors being opened after the AGMP (intubation).
- Before extubation, everyone should leave the room except the anesthesiologist and an assistant, so that the patient can be extubated and the doors kept closed for 30 minutes\*. Anyone who stays in the room must have the appropriate N95 mask and must remain in the OR for 30 minutes\*. (\*There is variation in the province with regards to the amount of air exchanges per hour in operating rooms. The time for door opening after an AGMP can be decreased to 15 minutes for facilities with air exchanges of 20 per hour.)
- Vertical transmission to the Newborn and Newborn resuscitation: there have been isolated reports where of infant infection where vertical transmission of COVID-19 could not be excluded in situations of severe/critical maternal illness
- Thus, as a conservative measure, **EDCP with N95 masks should be worn by all staff in the room during delivery for patients that are potentially at increased risk of vertical transmission, in case the newborn requires positive pressure ventilation or intubation.** It is imperative that all parties are involved and aware of the patient prior to delivery for proper setup of the room and donning of PPE. The amount of staff in the room should be minimized.
- Patients potentially at higher risk of vertical transmission include orange or red zone patient AND one or more of:
  - Requiring supplemental oxygen, other respiratory support, or blood pressure support
  - Immunocompromised patient (eg immune suppressant medications or therapies, hereditary immunodeficiency, acquired immunodeficiency, etc)
- Green zone patients can be recovered in PACU regardless of the type of anesthesia required.
- For the postoperative recovery of orange or red patients who had neuraxial anesthesia, recovery can occur in the operating room or a private labour room. They should NOT be recovered in PACU.
- For the postoperative recovery of for an orange or red patient who had general anesthesia, the patient should be recovered in the operating theatre for 15-60 minutes depending on the air exchange in the OR before going to a private room. Staff should continue to wear N95 masks. Refer to extubation guidelines for further details.

### Venous Thromboprophylaxis in Obstetrical Patients with COVID-19:

- Literature suggests that COVID-19 is a procoagulable disease. Obstetrical patients may be at further risk of thromboembolism due to the hypercoagulable state of pregnancy and potential for limited mobility if admitted to hospital for a prolonged period of time.
- For COVID-positive and suspect patients admitted to hospital for either respiratory or obstetrical indications, consideration should be given to initiating venothromboembolism (VTE) prophylaxis.
- The choice of anticoagulant and duration of therapy should be assessed on a case-by-case basis with input from a multidisciplinary team including, but not limited to, Anesthesia and Obstetrics.
- Proper communication, documentation, and handover should occur so the on-call anesthesiologist is aware of any inpatient who has received anticoagulant medications.
- VTE prophylaxis could significantly impact the ability for the provision of safe neuraxial anesthesia. A regimen should be chosen with the goal of prevention of thromboembolic events, while ensuring patients will still be eligible for neuraxial techniques.  
**The likelihood of needing neuraxial analgesia should be a primary consideration in the choice of anticoagulant.**
- ASRA Guidelines must be followed for patients on heparin who receive regional procedures.
- Options for VTE prophylaxis include low-molecular weight heparin (LMWH) and unfractionated heparin (UFH). The use of UFH will better facilitate the use of neuraxial techniques given its pharmacologic profile. Conversely, LMWH has a better bioavailability in pregnant patients, with more predictable dosing. LMWH may be an option for patients who have more severe complications from COVID-19 or who are expected to be hospitalized for a prolonged period of time. Transition from LMWH to UFH, or cessation of VTE prophylaxis altogether, will be required as the patient gets closer to delivery.
- A platelet count should be performed to assess for heparin-induced thrombocytopenia if a patient has been on UFH for more than four days.
- **Anticoagulant therapy should be discontinued upon the onset of labour to facilitate neuraxial anesthesia and analgesia.**
- **Anticoagulant therapy should be held as per ASRA guidelines before an elective procedure.**
- In the event of unforeseen labor or urgent cesarean delivery, the choice of analgesia and/or anesthesia should weigh the risks of general anesthesia and benefits of neuraxial anesthesia in the setting of the anticoagulant type, dose, time of administration, and pertinent laboratory values.

### Additional Considerations:

- Approximately one third of patients in a case series from Wuhan developed thrombocytopenia (platelet count <150). Notably these patients were from the general population, not just obstetric patients. A second case series noted that platelets counts are lower in more severe COVID-19 disease. Checking the platelet count before insertion of epidural or spinal could be considered. However, if there is not time for a platelet count, we feel the benefit of neuraxial block in this setting outweighs the risk of proceeding with neuraxial block, barring any other contraindications.

**Please refer to separate documentation regarding more specific and comprehensive recommendations on patient flow during their hospital stay.**

Drafted By: Dr. Leanne Docking, Dr. Vasudha Misra, Dr. Vanessa Poliquin and Christine Finnbogason

#### REFERENCES AND FURTHER RESOURCES

AGMP (Use of N95 respirator): <https://www.youtube.com/watch?v=syh5UnC6G2k>

This video shows the procedure for donning and doffing PPE required for an AGMP.

<https://www.sogc.org/en/content/featured-news/Committee-Opinion-No-400%E2%80%93COVID-19-in-Pregnancy-updated-May-14-2020.aspx>

[https://static1.squarespace.com/static/5e6613a1dc75b87df82b78e1/t/5e7201706f15503e9ebac31f/1584529777396/OAA-RCoA-COVID-19-guidance\\_16.03.20.pdf](https://static1.squarespace.com/static/5e6613a1dc75b87df82b78e1/t/5e7201706f15503e9ebac31f/1584529777396/OAA-RCoA-COVID-19-guidance_16.03.20.pdf)

[https://soap.org/wp-content/uploads/2020/03/SOAP\\_COVID-19\\_Obstetric\\_Anesthesia\\_Care\\_031820-1.pdf](https://soap.org/wp-content/uploads/2020/03/SOAP_COVID-19_Obstetric_Anesthesia_Care_031820-1.pdf)

[rcog.org.uk/globalassets/documents/guidelines/2020-06-04-coronavirus-covid-19-infection-in-pregnancy.pdf](http://rcog.org.uk/globalassets/documents/guidelines/2020-06-04-coronavirus-covid-19-infection-in-pregnancy.pdf)

Horlocker et al, Regional Anesthesia in the Patient Receiving Antithrombotic or Thrombolytic Therapy, ASRA Guidelines, 4<sup>th</sup> Ed. Reg Anesth Pain Med 2018;43: 263–309

Leffert et al, The Society for Obstetric Anesthesia and Perinatology Consensus Statement on the Anesthetic Management of Pregnant and Postpartum Women Receiving Thromboprophylaxis or Higher Dose Anticoagulants. Anesth Analg 2018;126:928–44

<https://sharedhealthmb.ca/files/covid-19-advice-for-management-of-obstetrical-patients.pdf>

<https://sharedhealthmb.ca/files/covid-19-guidance-for-obstetrics.pdf>