MUHC Perinatal Infection Control Recommendations for COVID-19
Version 9 – April 9, 2020

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1. **Background:**

- The clinical spectrum and complications of COVID-19 in pregnant women are still not well known. However, so far, pregnant women do not appear to be at higher risk of severe disease than non-pregnant women. Of 147 pregnant women infected with SARS-CoV-2 in China, 8% developed severe disease and 1% had critical illness. However, given similarities between the genomes of SARS-CoV-1 (responsible for SARS in 2002-2003) and SARS-CoV-2, adverse maternal and fetal outcomes are possible.

- Extrapolating from other respiratory viruses (including SARS-CoV-1 and MERS-CoV), intrauterine transmission of SARS-CoV-2 appears unlikely. A case series of 6 pregnant women infected with SARS-CoV-2 in the third trimester in Wuhan, China, showed no evidence of vertical transmission to their neonates (amniotic fluid, cord blood, neonatal throat swabs and breast milk all tested negative for SARS-CoV-2 by PCR). Moreover, during the SARS epidemic in 2002-2003, there were no cases of vertical transmission among infected pregnant women.

- Neonates born to mothers with COVID-19 may experience adverse outcomes. In a case series of 10 neonates born to mothers with COVID-19, 6 were born preterm, 2 had low birth weight, 6 had respiratory distress, 1 had pneumothorax, 2 had fever, 1 had vomiting and 2 had thrombocytopenia. One death was reported. Oropharyngeal SARS-CoV-2 PCR was negative on the 9 neonates tested. It is unclear if the neonatal complications were related to maternal COVID-19.

- Based on a small amount of data, there is no evidence to date that SARS-CoV-2 is detected in breast milk. Furthermore, there has been no evidence of virus transmission via breast milk from previous experience with other coronaviruses such as SARS-CoV and MERS-CoV. The risk of SARS-CoV-2 transmission via breast milk is thus likely to be low.

- It is still unknown whether neonates with COVID-19 are increased risk for severe complications. In one report, a neonate who tested positive for SARS-CoV-2 at 30 hours of life experienced respiratory symptoms and had radiological evidence of pneumonia.

- There is currently no antiviral treatment or vaccine for SARS-CoV-2. Management of cases is supportive.

2. **Recommendations for pregnant and postpartum women:**

2.1 **General recommendations:**

- Prenatal group meetings should cease to occur during the pandemic to prevent viral transmission within large groups of individuals. Instead, pregnant women should be provided with relevant electronic resources (e.g. [https://www.inspq.qc.ca/mieux-vivre](https://www.inspq.qc.ca/mieux-vivre)).

- Prenatal follow-up appointments are considered essential and must be maintained during the pandemic. However, appointments using telemedicine are recommended as much as possible.
Blood tests and interventions should be grouped with appointments as much as possible to avoid multiple visits to the hospital.

- Prenatal ultrasounds during the pandemic should be performed as recommended below:

<table>
<thead>
<tr>
<th>Term</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1(^{st}) trimester</td>
<td>Complete fetal ultrasound should be performed between 11 and 13 weeks. Early fetal ultrasound (less than or equal to 10 weeks) must not be performed unless medically indicated.</td>
</tr>
<tr>
<td>2(^{nd}) trimester</td>
<td>Second trimester fetal ultrasound should be performed between 20 and 22 weeks.</td>
</tr>
<tr>
<td>3(^{rd}) trimester</td>
<td>Third trimester fetal ultrasound should be prioritized if medically indicated.</td>
</tr>
<tr>
<td>Monthly</td>
<td>Monthly fetal ultrasounds should be performed until delivery in pregnant women with confirmed COVID-19.</td>
</tr>
</tbody>
</table>

- Visitors will NOT be allowed in the Birthing Centre or on D6 as per visitor restriction policy enforced during the pandemic.
- Only 1 asymptomatic partner (or family member) will be allowed to accompany the pregnant woman in the Birthing Center / mother on D6.
  - However, asymptomatic partner/family member will NOT be allowed to visit if, in the previous 14 days, they had contact with a confirmed case of COVID-19.
  - Partner/family member with infectious symptoms will NOT be allowed to visit and will be told to return home immediately.
- Partners/family members of patients with suspected or confirmed COVID-19 must remain confined to the patient’s room as per the policy enforced during the pandemic. They would only be allowed to leave the room under exceptional circumstances, after having performed hand hygiene, wearing a procedure mask at all times and not going to common areas of the hospital.

2.2 Birthing Centre Triage:

a) Screening to identify suspect COVID-19 cases:
  - Pregnant women and their accompanying partner/family member presenting to Labor and Delivery should be screened on arrival for:
    1) COVID-19 symptoms (one or more of: fever, cough, shortness of breath, sore throat, nasal congestion/rhinorrhea, diarrhea, vomiting, headache, anosmia)
    2) Close contact with a confirmed case of COVID-19
  - Pregnant women (OUTPATIENTS AND INPATIENTS) who have one or more of the abovementioned symptoms will be considered suspect COVID-19 cases and must be tested, regardless of travel or contact exposure.
If screening identifies that a pregnant woman is a suspect case of COVID-19, the following steps should be taken:

- The pregnant woman should perform hand hygiene immediately and be given a procedure mask to wear.
- Is there an active obstetrical issue and/or does the patient require hospitalization?
  - **If YES TO EITHER:**
    - She should be transferred immediately into a single room with the door closed in the Birthing Centre or on D6 under droplet/contact precautions.
    - If the pregnant woman is critically ill and/or will require an aerosol-generating medical procedure (AGMP), she needs to be placed in a negative-pressure room under airborne/droplet/contact precautions.
    - Refer to this document for most up-to-date list of AGMPs: https://www.mymuhc.muhc.mcgill.ca/mymuhc/documents/additional-precautions-patients-suspected-or-confirmed-covid-19-muhc
    - Adult Infectious Diseases (ID) should be consulted for further testing/management recommendations.
  - **If NO TO BOTH:**
    - She should be placed immediately in a single room with the door closed and be referred for testing at the outpatient testing facility for the MUHC.
    - Outside of testing facility opening hours: send patient home to call the COVID line (1 877 644-4545) to obtain an outpatient appointment at a COVID clinic for testing or present to a walk-in COVID clinic (e.g. Place des Festivals or other walk-in/drive through locations, as these open in the future).
  - Testing for SARS-CoV-2 should be performed as per MUHC guidelines:
    - https://www.mymuhc.muhc.mcgill.ca/node/52139
  - If screening identifies that a pregnant woman’s accompanying partner/family member is a suspect case, they should be instructed to perform hand hygiene, be given a procedure mask to wear and be instructed to go home and call the COVID line (1 877 644-4545) to obtain an appointment to get tested or present to a walk-in COVID clinic (e.g. Place des Arts or other walk-in/drive through locations).

### 2.3 Process for confirmed cases:
- Pregnant women who test positive for SARS-CoV-2 and do not require hospitalization can be sent home with instructions on self-isolation and the period of communicability. Instructions are to be provided by the treating physician.
Pregnant women who test positive for SARS-CoV-2 and require hospitalization will be cared for at the MUHC Adult Glen site (on D6 or in Birthing Centre) under additional precautions as stated above for suspect cases.

Accompanying partner/family member who is a confirmed case cannot visit until deemed no longer contagious par Public Health.

2.4 Birthing Centre:

Vaginal deliveries:
- If possible, scheduled inductions should be postponed until the patient with confirmed COVID-19 has recovered and is no longer contagious.
- Must occur in a single room with door closed under droplet/contact precautions.
- However, if an AGMP will be performed, the delivery should occur in a negative-pressure room under airborne/droplet/contact precautions.
  - Of note, face mask O2 is no longer considered an AGMP. COVID-19 suspect, confirmed or exposed pregnant women who require oxygen via face mask during delivery can thus be cared for in a regular room under droplet/contact precautions.

Caesarian sections (C-sections):
- If possible, elective C-sections should be postponed until the patient with confirmed COVID-19 has recovered and is no longer contagious.
- Given the risk of an AGMP being required during a C-section, deliveries by C-section must occur in the operating room in a theatre that has a negative-pressure antechamber under airborne/droplet/contact precautions.

NICU presence at the delivery should follow the usual indications and protocol.
Continuous fetal monitoring is recommended.

2.5 Recommendations upon newborn delivery:
- Mother and father/accompanying family member MUST be instructed to perform hand hygiene and wear a procedure mask prior to holding their newborn.
- Skin-to-skin is allowed as long as mother can comply with instructions above.
- There is no evidence for delayed cord clamping.
- The placenta should be hand delivered to the Pathology Laboratory (to save in case pathology and further studies are needed on it). Placental handling and transport should follow the “Guidelines for obtaining specimens for laboratory testing from a patient under investigation for a SARS-CoV-2 infection”:
  
  https://www.mymuhc.muhc.mcgill.ca/node/52139
2.6 Postpartum (D6):

- Postpartum women who are suspect cases must remain under droplet/contact precautions (airborne/droplet/contact if an AGMP is performed) pending test results.
- If SARS-CoV-2 testing is negative, discuss with Infection Prevention and Control (IPC) to see if additional precautions for COVID-19 can be discontinued. If another respiratory virus is identified, droplet/contact precautions should continue as per MUHC Clinical Protocol “Additional precautions for adult in-patient care” (https://www.mymuhc.muhc.mcgill.ca/system/files/documents/additional_precautions_for_in-patients_dec_2018_update.pdf).
- Postpartum women who test positive for SARS-CoV-2 and are well are sent home at 24 hours with instructions on self-isolation and the period of communicability. Instructions are to be provided by the treating physician.

3. Recommendations for asymptomatic pregnant or postpartum women exposed to SARS-CoV-2:

- Hospitalized asymptomatic pregnant or postpartum women exposed to SARS-CoV-2 (contact with a confirmed case of COVID-19 in prior 14 days) should be cared for under droplet/contact precautions until the end of the 14-day incubation period.
  - If their neonate is admitted in the NICU, they could be allowed to visit as long as they wear a procedure mask for the entire duration of the visit.
  - If they are discharged home before the end of the 14-day incubation period, they should be instructed to continue self-isolation at home until the end of the incubation period.
- Should they develop symptoms of COVID-19 during the incubation period, they must be managed as suspect cases as detailed previously.

4. Recommendations for neonates born to women with suspected or confirmed COVID-19:

4.1 General principles:

- Unless the mother’s illness is preventing her from caring for her newborn or the neonate is admitted to the NICU, separation of the mother and her neonate will NOT be recommended.
- Mother and baby will be allowed to room in as long as the baby stays more than 2 meters away from the mother and mother performs hand hygiene and wears a procedure mask when she is within 2 meters of her newborn.
- The baby’s father/other exposed family member should also perform hand hygiene and wear a procedure mask when within 2 meters of the newborn.
- If the mother is unable to comply with infection prevention measures (hand hygiene, mask wearing, respiratory hygiene and cough etiquette), keep baby more than 2 meters away from
the mother in the room at all times and assign a well caregiver to care for the baby. Consider using an isolette for the newborn.

- Out on pass is not allowed.
- Parents must remain confined to the room on D6 until discharge. If they must leave the room under exceptional circumstances, they must perform hand hygiene, wear a procedure mask at all times when outside the room and not go to common areas of the hospital.

4.2 Infant feeding:

- For newborns rooming in with their mother, breastfeeding will be allowed as long as the mother can comply with hand hygiene, putting on a procedure mask and wearing a clean hospital gown before each feeding.
- There is no recommendation to limit breastfeeding duration as long as the mother complies with the precautions above.
- The procedure mask must be changed if wet or soiled.
- Expressed breast milk will also be allowed as long as the mother performs hand hygiene before touching the breast pump and bottle and follows recommendations for breast pump cleaning and disinfection after each use. A dedicated breast pump should be provided. If possible, consider having someone who is well feed the infant.
- The bottle of EBM being transported out of the mother’s room should be disinfected by the bedside nurse or a PAB using 1 disinfectant wipe and placed into a biohazard bag prior to being brought to a storage fridge.

4.3 Neonates born to mothers who are SUSPECT cases:

4.3.1 *Asymptomatic term or late-preterm (gestational age 35 weeks and greater) neonates who will be admitted to the Newborn Nursery (D6):*

- Can room in with mother in a **single room with door closed under droplet/contact precautions.**
- If an AGMP is going to be performed on the mother, the mother-neonate dyad should be placed in a negative-pressure room under airborne/droplet/contact precautions.
- A distance of greater than 2 meters should be kept between the mother and her neonate. Consider keeping the neonate in an isolette in the room.
- For any contact within 2 meters of her neonate (e.g. feeding, diaper changing, etc.), the mother must be instructed to perform hand hygiene, wear a procedure mask and a clean hospital gown.
- The asymptomatic exposed father or other family member must also perform hand hygiene and wear a procedure mask when within 2 meters of the neonate.
- If a healthy caregiver is available, most of the newborn care should be done by them.
SARS-CoV-2 testing on the neonate should NOT be sent unless the mother is confirmed to have COVID-19 (see Section 4.4.).

The mother and her neonate must be kept in hospital until at least 24 hours post-delivery. If SARS-CoV-2 PCR result is not back by discharge, instructions for home isolation must be given pending test result. The physician who ordered the SARS-CoV-2 PCR on the mother is responsible for following up on the result and calling the family.

- A return visit should be avoided as much as possible.
- Phone communication with the healthcare team and CLSC phone follow-up (within 24-48 hours of going home) should be prioritized.

If maternal SARS-CoV-2 PCR is negative, discuss with adult IPC prior to discontinuing additional precautions for COVID-19. If another respiratory virus is identified, droplet/contact precautions should continue.

### 4.3.2 Symptomatic and/or preterm (less than 35 weeks gestational age) neonates:

- Will be admitted to the NICU in a negative-pressure room under airborne/droplet/contact precautions.
- However, if the newborn is not critically ill and will not require an AGMP, droplet/contact precautions in a regular room are sufficient.
- The symptomatic mother (and other symptomatic caregivers if applicable) will NOT be allowed in the NICU.
- NICU to perform usual investigations (e.g. CBC, blood culture, nasopharyngeal [NP] swab for multiplex respiratory virus PCR, lumbar puncture if indicated, imaging as indicated) and manage neonate as per clinical presentation.
- ALL LABORATORY SPECIMENS MUST BE COLLECTED, HANDLED AND HAND-DELIVERED TO THE RESPECTIVE LABORATORIES as per the “Guidelines for obtaining specimens for laboratory testing from a patient under investigation for a SARS-CoV-2 infection” [https://www.mymuhc.muhc.mcgill.ca/node/52139](https://www.mymuhc.muhc.mcgill.ca/node/52139)
- SARS-CoV-2 testing on the neonate should NOT be sent unless maternal testing is positive or suspicion of COVID-19 for mother is high.
- If maternal SARS-CoV-2 PCR is negative, discuss with adult IPC prior to discontinuing additional precautions for COVID-19. If another respiratory virus is identified in neonate, continue droplet/contact precautions.

### 4.3.3 Asymptomatic neonates who will be admitted to the NICU for other reasons:

- Will be admitted to the NICU under droplet/contact precautions.
- SARS-CoV-2 testing on the neonate should NOT be sent unless the mother is confirmed to have COVID-19 (see Section 4.4.).
- If maternal SARS-CoV-2 PCR is negative, discuss with IPC prior to discontinuing additional precautions for COVID-19.
4.4 Neonates born to mothers who are CONFIRMED cases:

4.4.1 **Asymptomatic term or late-preterm (gestational age 35 weeks and greater) neonates who will be admitted to the Newborn Nursery (D6):**

- Can room in with mother in a single room with door closed under droplet/contact precautions.
- If an AGMP is going to be performed on the mother, the mother-neonate dyad should be placed in a negative-pressure room under airborne/droplet/contact precautions.
- A distance of greater than 2 meters should be kept between the mother and her neonate. Consider keeping the neonate in an isolette in the room.
- For any contact within 2 meters of her neonate (e.g. feeding, diaper changing, etc.), the mother must be instructed to perform hand hygiene, wear a procedure mask and a clean hospital gown.
- The asymptomatic exposed father or other family member must also perform hand hygiene and wear a procedure mask when within 2 meters of the neonate.
- If a healthy caregiver is available (e.g. father), most of the newborn care should be done by them.
- One (1) NP swab for SARS-CoV-2 PCR should be obtained from the neonate any time after 1-2 hours of life, after cleansing of the neonate’s face (to decrease risk of false positive result from exposure to SARS-CoV-2-containing maternal body fluids) and prior to discharge, regardless of the timing of maternal infection during pregnancy.
- **ALL LABORATORY SPECIMENS ON THE NEONATE MUST BE COLLECTED, HANDLED AND HAND-DELIVERED TO THE RESPECTIVE LABORATORIES** as per the “Guidelines for obtaining specimens for laboratory testing from a patient under investigation for a SARS-CoV-2 infection” https://www.mymuhc.muhc.mcgill.ca/node/52139
- The mother and her neonate must be kept in hospital until at least 24 hours post-delivery. **Instructions for home isolation and period of communicability must be given at discharge by the treating teams (Obstetrics and Pediatrics).** The physician who ordered the SARS-CoV-2 PCR on the neonate is responsible for following up on the result and calling the family.
  - A return visit should be avoided as much as possible.
  - Phone communication with the healthcare team and CLSC phone follow-up (within 24-48 hours of going home) should be prioritized.

4.4.2 **Symptomatic and/or preterm neonates:**

- Will be admitted to the NICU in a negative-pressure room under airborne/droplet/contact precautions.
  - However, if the newborn is not critically ill and will not require an AGMP, droplet/contact precautions in a regular room are sufficient.
The symptomatic mother (and other symptomatic caregivers if applicable) will NOT be allowed in the NICU.

NICU to perform usual investigations (e.g. CBC, blood culture, NP swab for multiplex respiratory virus PCR, lumbar puncture if indicated, imaging as indicated) and manage neonate as per clinical presentation.

In addition to the usual investigations, send the following tests:
- 1 NP swab for SARS-CoV-2 PCR.
- Liver enzymes, coagulation studies

ALL LABORATORY SPECIMENS MUST BE COLLECTED, HANDLED AND HAND-DELIVERED TO THE RESPECTIVE LABORATORIES as per the “Guidelines for obtaining specimens for laboratory testing from a patient under investigation for a SARS-CoV-2 infection” [https://www.mymuhc.muhc.mcgill.ca/node/52139](https://www.mymuhc.muhc.mcgill.ca/node/52139).

Neonates with suspected or confirmed COVID-19 should be regrouped geographically on the unit and cared for by dedicated staff (patient-staff cohort).

Neonates with negative SARS-CoV-2 PCR must be cared for under droplet/contact precautions for a minimum of 14 days as they are close contacts of a confirmed case. The decision to remove precautions MUST only be taken after consultation with pediatric IPC.

Neonates with positive SARS-CoV-2 PCR no longer require transfer to Sainte-Justine and will remain under care of the NICU at the MCH.

5. **Recommendations for neonates born to asymptomatic women exposed to SARS-CoV-2 (via travel or contact with a suspected or confirmed case):**
   - Asymptomatic term or late-preterm (gestational age 35 weeks and greater) neonates admitted to the Newborn Nursery (D6) will room in with their mother and thus be cared for under droplet/contact precautions.
   - For any contact within 2 meters of her neonate (e.g. feeding, diaper changing, etc.), the mother must be instructed to perform hand hygiene, wear a procedure mask and a clean hospital gown.
   - Neonates admitted to the NICU can be cared for using routine practices +/- additional precautions if indicated as per presenting symptoms.

6. **Recommendations for neonates who become symptomatic during hospitalization:**
   - Symptoms/signs of COVID-19 to consider in neonates include one or more of: fever, cough, respiratory distress, nasal congestion/rhinorrhea, vomiting, diarrhea.
   - Must be placed in a negative pressure room under airborne/droplet/contact precautions.
   - However, if the newborn is not critically ill and will not require an AGMP, droplet/contact precautions in a regular room are sufficient.
   - One (1) NP swab for SARS-CoV-2 PCR must be sent.
ALL LABORATORY SPECIMENS MUST BE COLLECTED, HANDLED AND HAND-DELIVERED TO THE RESPECTIVE LABORATORIES as per the “Guidelines for obtaining specimens for laboratory testing from a patient under investigation for a SARS-CoV-2 infection” https://www.mymuhc.muhc.mcgill.ca/node/52139

The decision to remove precautions MUST only be taken after consultation with pediatric IPC.

Neonates with positive SARS-CoV-2 PCR no longer require transfer to Sainte-Justine and will remain under care of the NICU at the MCH.

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8. References


