

Updated SOGC Committee Opinion – COVID-19 in Pregnancy

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In December 2019, a novel coronavirus, eventually termed severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), was identified in Wuhan, China. As of 10 May, 2020, COVID-19 has infected >4 million people globally and caused >270,000 thousand deaths.¹ By March 2020, Canada had detected several dozen cases, most of them in returning international travellers or their close contacts.² And, by early April over 22,000 cases had been detected nationally, with the majority having been acquired through community spread. Given that pneumonia, sepsis and multi-organ failure is an important cause of maternal morbidity and mortality, the emergence and global spread of COVID-19 has raised concerns about the implications of this outbreak for pregnant individuals and their fetuses. Patients are looking to their maternity care providers for information and guidance on how to prevent or manage infection with COVID-19.

Due to physiologic changes that occur in pregnancy, when compared with their non-pregnant counterparts, pregnant patients with lower respiratory tract infections historically experience worse outcomes, including higher rates of hospital and intensive care unit admission.³ Since 2002 there have been two other global outbreaks of highly pathogenic coronaviruses: severe acute respiratory syndrome (SARS) and middle east respiratory syndrome (MERS). While SARS and MERS are not identical to SARS-CoV-2 in their genetic structures or clinical manifestations, the recent outbreaks of these viruses may provide insights on the effects of COVID-19 in the context of pregnancy. The literature on SARS and MERS in pregnancy are limited to a handful of case reports and series.⁴⁻⁹ Many of these cases involved severe morbidity including the need for intensive care and cardiorespiratory support. Notably, there were cases of maternal mortality associated with SARS and MERS infection. The only published case-control study showed that pregnant individuals with SARS experienced worse outcomes than non-pregnant peers of similar age.¹⁰

Reports varied with respect to the effects of SARS and MERS on pregnancy outcomes. Spontaneous abortion has been reported among those infected with SARS and MERS during the first trimester.⁴ As well, stillbirth, intrauterine growth restriction, and preterm birth have been reported in pregnancies affected by SARS and MERS in the second and third trimesters.^{4,9} It is important to note, however, that a number of pregnancies had good outcomes despite maternal infection with SARS or MERS.⁶⁻⁸ Broadly speaking, and drawing upon our knowledge of other respiratory illnesses in pregnancy, adverse pregnancy outcomes are most likely related to the severity of maternal respiratory compromise.

To date, the reported case-fatality rate for the general population infected with COVID-19 is lower than that of either SARS or MERS.³ Evaluation is ongoing to determine whether there are any effects of COVID-19 on pregnant individuals and their fetuses. Pregnancy alone does not seem to confer higher risk of severe illness with COVID-19, compared to the general population, based on the limited data available.^{3, 11} By now, there are at least 598 published cases of pregnant individuals with confirmed COVID-19. Overall, the majority of these patients have had mild to moderate pneumonia; however, there have been 8 reported cases of maternal mortality related to COVID-19. Importantly, the rate of severe illness from COVID-19 is comparable between pregnant and non-pregnant women.¹²⁻⁷⁴ Pregnancy outcomes among the reported cases have been largely good.¹²⁻⁷⁴ Spontaneous and iatrogenic preterm labour have been the most commonly reported adverse pregnancy outcomes among patients with COVID-19. As the body of data continue to grow, it reveals that the true rate of preterm birth among women infected with COVID-19 during the second and third trimester may be much lower than initially reported, with recent estimates from 6- 15%. As with SARS and MERS, pregnancy outcomes are likely to be closely associated with severity of maternal illness.^{49, 75, 76}

The available case literature for COVID-19 in pregnancy has not established a risk for vertical transmission with this infection. Furthermore, maternal infection with SARS, MERS, or COVID-19 has not been associated with teratogenicity. However, there is still limited data concerning COVID-19 infection during the first trimester (when embryogenesis occurs), so risk of congenital anomaly associated with COVID-19 cannot yet be entirely excluded. As of April 30, 2020 a detailed analysis of individual cases in the literature determined that there have been at least 269 infants delivered to 266 pregnant patients (3 sets of twins).¹²⁻⁸⁸ There are nasopharyngeal or throat swabs available for 175 infants. There were 12 cases of infants who tested positive (6.9%). The timing of these swabs was variable and some were more than 48 hours leaving timing of transmission uncertain.

Of note, there are different interpretations of the risk of postpartum transmission related to cohorting infants with their mother. As this is droplet and contact transmitted virus, in prior cases of other similarly transmitted infections, mothers and infants have usually been cared for together – influenza, pandemic H1N1, SARS, when the mother is well enough to care for her infant and the infant is not requiring neonatal intensive care for its own health. The Chinese and US guidelines recommend immediate separation of mother and infant, whereas the FIGO, WHO and RCOG recommend the mother wear a mask, cleanse hands and body where infant will be in close contact.⁸⁹⁻⁹³ This represents the highly variable interpretation of the same body of literature.

Based on our current understanding of the global outbreak, the following points represent our understanding of COVID-19 in pregnancy with specific recommendations for antepartum, intrapartum and postpartum care:

Antepartum Care

- Obstetrical patients with respiratory symptoms should be asked to wear a surgical mask immediately upon presentation to the health care facility.

- Pregnant patients suspected of having been exposed to COVID-19 should be triaged quickly, given a mask to wear, and transferred to a single-occupancy room as quickly as possible.
- Testing should be performed as per local guidelines and recommendations. Pregnancy does not appear to alter test performance.
- Expectant management at home may be appropriate for many pregnant patients. For those requiring admission, droplet/contact infection precautions are adequate.
- Health care providers should consider delaying routine antepartum care appointments for pregnant patients who are being tested for COVID-19. Self-isolation as per local protocols is appropriate.
- The use of N95 respirators is only required for aerosol-generating procedures (e.g., intubation). The duration and discontinuation of precautions should be determined in accordance with Public Health Agency of Canada guidelines,⁹⁴ and provincial and territorial guidance.
- Health care providers can consider empiric antibiotic therapy for superimposed bacterial pneumonia in pregnant patients with confirmed COVID-19 infection or severe respiratory disease. First-line antibiotics are oral amoxicillin for stable patients and ceftriaxone for severe disease, based on general recommendations for the management of pneumonia. This should be done on a case by case basis with principles of antimicrobial stewardship in place.
- For maternal surveillance, close monitoring or initiation of an obstetrical early warning system is appropriate.
- Initiation of [antepartum corticosteroids](#) for fetal maturation could be considered as per current guidelines⁹⁵ if preterm delivery is indicated or anticipated based on maternal condition.
- Antepartum fetal surveillance of confirmed cases of COVID-19 should occur monthly and include fetal ultrasound assessment for growth and anatomy.

Intrapartum Care

- Droplet/contact precautions should be used, including wearing a surgical mask with eye protection, a gown, and gloves.
- Use of N95 respirators should be reserved for aerosol-generating procedures (e.g., intubation).
- Unnecessary health care personnel in the room should be minimized.
- It is advisable to limit the presence of symptomatic family and household contacts in the delivery suite and visitation should be permitted in accordance with locally developed infection prevention and control protocols.
- Intrapartum fetal monitoring in the form of EFM should be considered given evidence showing fetal distress during labour.
- Cesarean delivery should be reserved for obstetrical indications.
- There is no data to indicate that the second stage of labour generates aerosols and, as such, droplet/contact precautions are sufficient for vaginal delivery.
- Given that intubation is considered an aerosol-generating procedure, consideration should be given for the surgical team to wear N95 respirators for Cesarean delivery. Depending on the supply chain for PPE, it may be necessary to triage the use of N95 based on

likelihood of needing to convert to a general anaesthetic and this should be discussed with the entire surgical team prior to surgery.

- There is no evidence to avoid delayed cord clamping or to encourage early cleansing of the infant. Routine practices such as skin-to-skin contact (with the mother wearing a mask and after having washed her hands) and delayed cord clamping should continue.
- Elective Cesarean delivery should be delayed, if possible, until a woman is no longer considered infectious.
- Appropriate patient transfer planning should be made so as to minimize exposure of other patients in the hospital.
- Hospital birth is preferred to home birth for patients who have or are being tested for COVID-19, in light of the challenges associated with ensuring appropriate personal protective equipment in the home setting and the reports of intrapartum fetal distress in the literature.
- Regardless of the gestational age at which a pregnant woman was infected COVID-19, the newborn infant should be tested for COVID-19 at birth (i.e., nasopharyngeal swab for COVID-19 polymerase chain reaction)

Postpartum and Newborn Care

- Management in the post-partum period should be guided by a patient-centred discussion about the available evidence and its limitations.
- If breastfeeding is chosen, it should be encouraged after appropriate hand hygiene, while the mother is wearing a mask. Cleansing the chest/breast could be considered. Hydration should be emphasized especially in the setting of fever. It is possible for transmission of SARS-CoV-2 antibodies to the infant through breast milk; however, there is limited evidence of this transmission and the protective benefits are unclear. The World Health Organization recommends breastfeeding within the first hour of life if maternal condition permits.⁹⁶
- If maternal choice is to bottle feed, skin-to-skin contact is still encouraged. If the mother is too unwell to provide infant care, support should be offered with pumping, donor milk or formula-based nutrition based on patient wishes.
- We do not recommend universal isolation of the infant from either confirmed or suspected infection in the mother. Evidence shows that rooming-in helps the newborn thrive and that breastfeeding reduces the risk of newborn respiratory infection.⁹⁷ Skin-to-skin contact benefits both mother and newborn:⁹⁸⁻¹⁰⁰
 - Decreased maternal anxiety in the immediate postpartum
 - Decreased depression for the first year postpartum
 - Increased uterine tone with decreased bleeding
 - Improved weight gain and sleep quality in the newborn
- Given the significant mental health burden of both the pandemic and a diagnosis of COVID-19, prioritizing close contact for the mother-baby unit is of particular importance. Expectations and infant-care supports should be individualized to maternal condition and values.
- Contact with healthcare workers should be minimized and hospital stay should include a prompt discharge plan.⁹⁷
- Discharge counselling should reinforce good handwashing and application of a mask prior to all infant care, with frequent cleaning of high-touch surfaces. Consideration

should be given to the mother's ability to access necessary equipment such as masks and provisions should be made accordingly.⁹⁶

Conclusion

In the current COVID-19 pandemic the unique needs of pregnant individuals and their fetuses/newborns need to be addressed. As with any epidemic, data are evolving and a measured approach to management is required. Based on this evidence to date on COVID-19 as well as the literature on outbreaks of SARS, MERS and other emerging pathogens, the SOGC's Infectious Disease Committee has created this committee opinion to help guide maternity care providers in the care of pregnant patients. This guidance is based on the evidence to date and will continue to be updated as more information emerges.

For further information please see [attached resource](#).

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