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HOME BIRTH DURING THE COVID-19 PANDEMIC

A VIABLE OPTION FOR ALL CLIENTS AT LOW RISK OF COMPLICATIONS

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Disclaimer

These considerations have been developed by and for midwives, contextualized within the midwifery model and philosophy of care and are designed to provide information for midwives and clients engaged in complex clinical decision-making. The information and accompanying considerations are based on the best available evidence at the time of writing; evidence on COVID-19 and its impacts on pregnancy and birth is developing rapidly. The considerations for midwives will be kept under regular review as new evidence emerges.

The information in this guideline is not intended to dictate a course of action but inform clinical decision-making. Midwives should use their clinical judgment on how to interpret and apply the practice points to individual circumstances within the context of informed choice and available resources.

Revisions

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Understanding the SOGC Opinion on COVID-19 in Pregnancy

The SOGC in its committee opinion on COVID-19 in Pregnancy continues to recommend that "hospital birth is preferred to home birth for patients who have tested positive or are being tested for COVID-19, in light of the challenges associated with ensuring appropriate personal protective equipment in the home setting, inability to control ventilation, and the high rates of fetal distress that have been reported in the literature." (1)

The SOGC opinion does not concern the choice of birthplace for the well pregnant person during the COVID-19 pandemic. Rather, this opinion specifically indicates a preference for hospital birth over home birth for pregnant people "who have or are being tested for COVID-19." Although not explicitly stated, presumably this means that the pregnant person must either:

- Be symptomatic or asymptomatic with a positive COVID-19 test, or
- Have signs and symptoms consistent with COVID-19 case definitions and results from COVID-19 testing are pending.

The Ontario Provincial Council for Maternal and Child Health (PCMCH) guidance states that "regardless of whether the woman is suspected or confirmed COVID-19, her place of birth will continue to be informed by obstetrical factors and her birth place preferences." (2) This guidance is well aligned with the approach the AOM has taken since March, which is outlined within the pages of this document.

Considerations for Home Care during Pregnancy

Pregnant people do not appear to be at higher risk of infection with COVID-19 than the general population (3), although the variants of concern (VOCs) accounted for in Ontario are associated with increased transmissibility (4) and there are concerns about increased severity of disease including increased need for ventilation and intensive care among the pregnant population, including pregnant individuals with no other known risk factors. (5) WHO guidance on provision of home care for people with confirmed or suspected COVID-19 infection indicates that people with COVID-19 with mild illness may be cared for at home unless there is a concern about rapid deterioration or an inability to promptly return to hospital. (6) Further, WHO indicates that home care is indicated for those who refuse hospitalization following an informed choice discussion, and when inpatient care is unavailable or unsafe (e.g. capacity is limited, and resources are unable to meet the demand for healthcare services). (6)

Personal Protective Equipment (PPE) in the Home Setting

Personal protective equipment including surgical mask, eye protection, gloves, gown, and hand hygiene, is likely effective in protecting health care providers from COVID-19. (7) The use of droplet and contact precautions at all clinical encounters is recommended as best practice, however based on a point of care risk assessment (PCRA), including consideration of the local context (e.g., in "hot spots"), a midwife may choose to wear a N95 while attending the labour and birth in a home setting.

If adequate PPE is available and appropriate infection prevention and control (IPAC) practices are applied, home birth is an appropriate option within the pandemic context.

See Appendix 1 for detailed information on how to maintain PPE and IPAC practices in the home setting during the COVID-19 pandemic.

Research on Birth Outcomes for People with COVID-19

Growing evidence, particularly evidence drawn from the Canadian context, helps to inform our understanding of the impact of COVID-19 on pregnancy and birth outcomes. No evidence was found specifically regarding the outcomes of pregnant people with suspected or confirmed COVID-19 who birthed at home.

- **Fetal loss:** At present, there is no evidence to suggest that pregnant people are at an increased risk of miscarriage or early pregnancy loss when diagnosed with COVID-19. (3)
- **Vertical transmission:** Vertical (intrapartum) transmission is very uncommon although may be possible and may be associated with the severity of illness. In many case reports where amniotic fluid, cord blood, placenta swabs, genital fluid and breastmilk samples were tested, all have returned negative for the virus. (8–11) In reported cases where newborn babies develop COVID-19 after birth, the large majority of babies were well. (12)
- **Mode of birth:** Most individuals in the published case reports had caesarean sections. In some of these cases there was a specific medical indication for caesarean section, while in others the only known complication was a diagnosis of COVID-19. In some settings, it is believed that having COVID-19 was itself an indication for caesarean section. Current guidelines maintain that caesarean sections should only be performed when medically indicated and NOT due to diagnosis of COVID-19 alone. (3)
- **Fetal distress:** Fetal distress (undefined) was reported in many of the early cases reports. It is unclear if the fetal distress was directly related to COVID-19 or another clinical factor such as prematurity. A large case-control study examined pregnancy outcomes among 34 suspected or confirmed cases of COVID-19 compared to 142 controls. This research found no differences in intrauterine fetal distress between the two groups.(11)
- **Outcomes for birthing parents:** Consistent reporting from CANCOVID-Preg data suggests that pregnant individuals are at increased risk of severe illness, hospitalization and ICU admission compared to non-pregnant counterparts. (12)

- Pregnant individuals with pre-existing conditions such as lung or heart disease, hypertension and diabetes were more at risk of becoming unwell and requiring admission to hospital. (12-14) These comorbidities are strongly tied to the social determinants of health; disaggregated data shows racialized communities and people living in poorer neighborhoods are experiencing disproportionately higher rates of COVID-19 infection, severe disease and mortality. (1)
- Clinical decompensation may be possible in the postpartum period. (15) In mild-moderate cases of COVID-19, increasing dyspnea (shortness of breath) appears to be the most common indicator of potential decompensation. Other signs include a reduction in urine output and drowsiness.
- **Outcomes for the neonate:** Data from CAN-COVID-Preg largely show positive pregnancy and neonatal outcomes. Spontaneous and iatrogenic preterm labour was the most commonly reported adverse pregnancy outcome; and the preterm birth rate is twice the rate than in the general pregnant population. Most newborns were not admitted to the NICU and most were in the normal range for birth weight. Stillbirth rates were very rare and are not statistically higher than the general Canadian estimate of stillbirth. There is no evidence to suggest the COVID-19 causes fetal malformations or other developmental problems. Most newborns, if infected, have mild symptoms and recover completely. (12)

Considerations for Midwives

Based on our current understanding, the following points represent considerations for care:

1. **Home birth should continue to be offered to all clients at low risk of complications in the pandemic context.**
    - This includes all clients who do not have suspected or confirmed COVID-19 or who have recovered from confirmed or suspected COVID-19 earlier in their pregnancy.
    - Home birth may be a beneficial tool for social distancing and to minimize the impact on a potentially overburdened hospital during the COVID-19 pandemic.
    - For clients at low risk of complications and who value low intervention birth, home birth is recommended as a way to limit obstetrical intervention and reduce risk of COVID-19 infection.

2. **As part of the choice of birthplace informed choice discussion for the well client at low risk of complications, implications related to care during a pandemic should be discussed,** including:
    - The rates of obstetric interventions and health outcomes associated with choice of birthplace, including indications for consultation and transfer of care.
    - The uncertainty about degree and risk of exposure to COVID-19 for both client and the midwife in different birth settings.
    - Informing the client that their midwife will screen them and members of their household for COVID-19 prior to entering the client's home, using the latest provincial case definitions. If the client or a member of the household has a positive screen, an informed choice discussion about place of birth will occur, including the possibility that the midwife may recommend a change of birthplace (e.g. hospital birth or birth centre) based on the clinical circumstances and availability and adequacy of PPE.
    - Limiting the people in attendance during the labour and birth to only essential support people. Clients and household members will be asked to practice frequent hand hygiene, respiratory etiquette and to disinfect commonly touched surfaces and enact social distancing to the extent this is possible in the provision of intrapartum care. Support people may be asked to wear some or all of droplet/contact precautions according to availability.
    - Information about what is known about availability of local resources and capacity for timely access to emergency services, treatments and collaboration with other health care providers within the context of the pandemic setting.
    - Potential unavailability of midwives, or midwife and second attendant to attend their birth at home due to human resource restrictions.

3. **For afebrile, term clients who have mild illness[1] associated with COVID-19 and in whom no other co-morbidities[2] present, an informed choice discussion regarding risks and benefits of choice of birthplace should be comprehensive and well documented. This discussion should include the information in point 2, as well as additional information on:**
    - The uncertain evidence of increased incidence of fetal distress, caesarean section and either spontaneous or iatrogenic preterm labour for people with COVID-19.
    - Pregnancy outcomes to date, which have demonstrated no cases of severe neonatal asphyxia or neonatal death; APGAR score was > 7 at 1 minute for all neonates (term or preterm) born to parents with COVID-19.
    - SOGC's recommendation for EFM, which is not available in the home setting and the benefits and limitations of intermittent auscultation.

4. **If a client has current confirmed or suspected COVID-19 and is febrile or when co-morbidities are present, hospital birth is recommended regardless of the severity of COVID-19 symptoms.**
    - People with co-morbidities who present with mild illness have a higher risk of deterioration. (16)

5. **For afebrile, term clients with mild COVID-19 symptoms that choose a home birth, monitoring protocols should include:**
    - Respiratory rate, spO2, and temperature assessments hourly (4).
    - Assessment for worsening of their COVID-19 symptoms, i.e., difficulty breathing, rising temperature, and/or deteriorating spO2.
    - Fetal monitoring may occur by intermittent auscultation q 15-30 minutes in labour and q5 minutes in the second stage.
    - Swab the newborn at birth to test for COVID-19 according to local testing protocols. SOGC recommends nasopharyngeal and umbilical swab for COVID-19 polymerase chain reaction.

6. **For clients with severe illness (e.g., pneumonia, respiratory distress) who refuse hospitalization or for whom hospitalization is unavailable midwives should provide care to best of their ability.**

7. **Water birth is not currently recommended for clients who have suspected or confirmed COVID-19.**
    - Available evidence, while limited, demonstrates that COVID-19 can be detected in feces.
    - Water birth may expose the midwife and baby to an additional route of transmission (fecal-oral) from contaminated water from the birth tub.

8. **The use of contact and droplet precautions during labour and birth for all births is recommended while providing care to the client at home.**
    - Midwives may consider the use of a N95 respirator during labour and birth based on the results of an individualized point of care risk assessment, including consideration of the local context (e.g., "hot spots")
    - PCMCH recommends that pregnant clients who are confirmed positive or clients who screen positive for signs/ symptoms of COVID-19 and are treated as suspected for COVID-19 should be given a surgical/procedure mask for all stages of labour, if tolerated (2)
    - The Public Health Agency of Canada recommends that all clients and support people wear medical masks in the home setting where health care is being delivered (17)

[1] The WHO defines 'mild illness' as uncomplicated upper respiratory tract viral infection symptoms such as fever, fatigue, cough (with or without sputum production), anorexia, malaise, muscle pain, sore throat, dyspnea, nasal congestion, or headache. Rarely, patients may also present with diarrhoea, nausea, and vomiting. (5)

[2] Co-morbidities may include: chronic respiratory disease, chronic heart disease, people who are immunocompromised, BMI ≥ 40 or certain underlying medical conditions, particularly if not well controlled (diabetes, renal failure, liver disease may be at risk). (18)

9. **Midwives duty of care as health care workers.**
    - The duty to care for the sick is an ethical obligation for health care workers because:
        - The ability of health care workers to provide care is greater than that of the public, increasing their obligation to provide care.
        - By choosing a profession that provides health care, they assume risks.
        - Health care professions have a social contract that calls on members to be available in times of emergency and they work in a publically supported health care system. (19)

    - During a pandemic, midwives must weigh their duty to care for their clients and the demands of their professional role against competing obligations to protect their own health and that of family, friends and clients. Midwives will face challenges and difficult decision making related to allocating scarce resources, scope of practice and workplace conditions. (19)

    - Ideally, midwives can look to their code of ethics or college standards for guidance about duty to care in the event of a communicable disease outbreak.
        - The College of Midwives of Ontario's professional standards includes the expectations related to duty to care that midwives:
            - Conduct themselves in a way that promotes clients' trust and the public's trust in the midwifery profession
            - Never abadon a client in labour.
            - Ensure that any physical or mental health condition does not affect their ability to provide safe and effective care.
            - Ensure clients have 24-hour access to midwifery care throughout pregnancy, birth, and postpartum or, where midwifery care is not available, to suitable alternate care known to each client.
            - Provide clients with a choice between home and hospital births.
            - Provide care during labour and birth in the setting chosen by the client.

    - Midwives have both an ethical and legal duty of care, however, the extent of this duty of care in a pandemic is not clear. Because of the uncertainty surrounding health care provider's rights and obligations during a pandemic, midwives need to work with "health care institutions, regulatory bodies and the public to ensure that those working during a pandemic feel safe and willing to work". (20) When making decisions in difficult conditions, with limited evidence and when resources are scarce, midwives will do their best to provide care in challenging circumstances and should consider the following:
        - **Available evidence.**
        - **Solidarity between midwives, midwifery practices and professions.** How can midwives and health care providers best support each other during times of crisis?
        - **Putting risk into perspective.** Weigh the risk of potentially becoming ill, the risk of being a vector of illness and the effect of withdrawal of their services on individual clients, midwife and hospital colleagues as well as to the wider health care system.
        - **Trust, good intentions and generosity.** Recognize that during a pandemic, each person is doing their best to make good decisions with the information they have, in rapidly evolving and challenging circumstances.

Conclusion

During the SARS outbreak in Toronto in 2003, an increased demand for midwifery attendance at home births was noted, both for those who were midwifery clients and also for non-midwifery clients who were seeking the care of a midwife to facilitate birth at home. The current COVID-19 pandemic conditions are not analogous to the conditions of the SARS outbreak, but there are some similarities such as allocation of medical services, access to safety equipment/PPE and questions about duty of care.

The COVID-19 pandemic has taxed health care systems globally. If Canadian hospitals become full with people with COVID-19 needing respiratory support, as is happening in Europe, it is fair to consider that well or mildly ill pregnant people will either have difficulty accessing hospital care for normal birth or will fear going into the hospitals in the midst of pandemic conditions.

In places where midwifery services are well-integrated into the health care system, evidence shows that planning at birth at home or in a birth centre is as safe as planning to give birth in hospital for midwifery clients at low risk of complications. Planned home birth or birth centre birth is also associated with a decreased need for obstetric and neonatal interventions (21), which has the potential to relieve strain on an overburdened hospital in the context of a pandemic.

However, much is unknown about providing home-based intrapartum care in the context of the current pandemic, including a lack of evidence about outcomes for clients with mild illness associated with COVID-19. It is also unknown whether community-based care or hospital-based care more effectively minimizes the spread of COVID-19 for pregnant and birthing people and their health care providers.

Midwives are trained to provide safe intrapartum care in the home setting. In the context of a pandemic, midwives must draw upon their clinical skills and judgement to keep birth as safe as possible for both their clients and themselves through appropriate risk screening, applying infection prevention and control principles, consulting and transferring care as indications arise and taking local context, resources and rapidly evolving circumstances into account (such as access to PPE, capacity/availability of EMS and medical support, spread of illness, and human health resources).

Appendix 1: Personal Protective Equipment (PPE) and Infection Prevention and Control in the Home Setting (COVID-19)

Prior to and during a homebirth, midwives should consider:

- **Screening clients for symptoms:** Prior to entering the client's home, midwives should screen the client and household members for COVID-19.
- **Environmental cleaning:** Clients and/or healthy household members should clean and disinfect high-touch surfaces in advance of the midwives' arrival.
    - To clean: use soap and water.
    - To disinfect: use a hospital-grade low level disinfect (e.g., Accel or Caviwipe) or a bleach/ water dilution (1 part bleach 9 part water) in spray bottles.
- **Hand hygiene:** Midwives, clients and attending household members should regularly wash their hands.
    - Use disposable towels for drying.
    - If unavailable, use clean cloth towels and replace them regularly, washing with laundry detergent.
- **Respiratory hygiene:** Educate and promote respiratory hygiene for clients and household members.
    - Cover mouth and nose when coughing/sneezing.
    - Use tissues, handkerchiefs, 3-layer with polypropylene fabric cloth masks or medical masks if available.
    - Dispose of tissues in appropriate waste containers.
- **Natural ventilation:** As much as possible, use natural forces (e.g., winds, breezes) to drive outside air through the home/birth room allowing for high air change rates per hour. (22)
    - Studies have found that natural ventilation (completely open windows and doors) achieved very high air change rates, exceeding minimum standards. (22)
    - Create cross-ventilation by opening windows or doors opposite from one another allowing outdoor air to flow across a room, creating a cross-breeze.
        - Ensure there are no obstacles (interior partitions or furniture) that might block air flow.
        - If available to the client, consider the use of portable air cleaning devices or increasing air filtration of HVAC systems to as high as possible. Consider upgrading to a filter with a Minimum Efficiency Reporting Value (MERV) of 14 or higher (23-24)
        - Operate forced air systems often (set to Fan On position) to filter or dilute indoor particles.
        - If near the birth room, operate exhaust fans or air extractors at high speed (23)
    - Consider the installation of a window fan or place a pedestal fan close to an open window to provide exhaust ventilation. (23)
        - A fan facing towards the window (facing outdoors) serves to pull the room air to the outside
        - The use of ceiling fans, portable (pedestal) fans or wall air-conditioning units increase air mixing within the birth space and ***should only*** be implemented if there is external ventilation to the outdoors.
    - During cross-ventilation, maintain a comfortable indoor air temperature
        - With colder temperatures, the outdoor air temperature can be low and will produce a greater driving force. A smaller opening area may be used in this circumstance.
        - Keeping the room temperature warm for the birth of the infant should be kept in mind and weighed against cross ventilation considerations.
    - Consider the use of a humidifier; maintaining a humidity level between 30% and 50% ; optimal humidity levels can impact the duration that the SARS-CoV-2 virus remains suspended in the air and how long they remain infectious. (24)

- **Use of PPE:** The use of droplet/contact precautions at all births is recommended as best practice.
    - Midwives may choose to wear a N95 respirator while attending labour and birth in a home setting based on the results of an individualized point of care risk assessment, including consideration of the local context (e.g., "hot spots")
    - Interim guidance for infection prevention and control of variants of concern in Ontario (25) recommends that:
        - Clients should be masked, if tolerated, when healthcare providers are visiting in their home
        - Where clients are expected to be masked, the client should be provided with a medical mask to replace their own personal masks

- **Proper donning and doffing of PPE**
    - If possible, set up a space (room or hallway) that is clean and is for donning PPE only.
        - Store additional clean PPE in packaging so that it does not become contaminated in this area.
    - If possible, set up a second space for removal of PPE (room or porch) away from the client and the clean donning area.
        - Make available clean gloves, alcohol-based hand rub, and containers or garbage bags for disposing of PPE in this space.
        - For PPE which you will clean and re-use, have a second waste container (such as a large *Rubbermaid* or *Tupperware* plastic bin with a lockable lid) available to hold this equipment.
        - Prior to leaving the client's room, disinfect your gloves/hands with an alcohol-based hand rub.

- **Requirements to change PPE:** Wear the same PPE until it is soiled (wet from moisture, contaminated with fluids or blood); damaged or torn; or hard to breathe through.
    - If the midwife requires a break (e.g., to eat, use the washroom):
        - Perform hand hygiene before and after taking off PPE
        - Remove PPE in a separate room from the client and the clean room
        - Store the mask for re-use:
            - Carefully fold the mask so that the outer surface is held inward and against itself
        - Keep mask in a clean, sealable paper bag or breathable container.

- **Storage of midwifery equipment:** Bring the minimum amount of equipment needed into the home, carry equipment in disposable or wipeable containers, and store away from the birth room.

- **Social distancing:** Limit the number of people in attendance during the labour and birth to only essential support people.
    - Household members with no symptoms and no exposure risk (no travel history and no close contact) are able to attend the birth
    - Household members who are self-isolating and/or suspected or confirmed to have COVID-19 may be asked to leave the home or should remain in a separate ventilated room for the duration of of the midwives' presence.
    - Essential support people may be asked to wear some or all of droplet/contact precautions as it is available for their use.

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