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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.

Understanding the SOGC Opinion on COVID-19 in Pregnancy

As of July 27, 2020, the SOGC in its committee opinion on COVID-19 in Pregnancy recommends that "hospital birth is preferred to home birth for women 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 high rates of fetal distress that is 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 which was released in April 2020 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

Although most people with COVID-19 have mild illness (81%), approximately 14% will develop more severe symptoms requiring oxygen therapy, and about 5% will require intensive care. (3) Mild illness associated with COVID-19 includes those with uncomplicated upper respiratory tract infections, with non-specific symptoms such as: fever, fatigue, cough, anorexia, malaise, muscle pain, sore throat, dyspnea, nasal congestion or headache. (3) Severe symptoms of COVID-19 such as pneumonia and marked hypoxia appear to be more common in older people, the immunosuppressed or those with long-term conditions such as diabetes, cancer and chronic lung disease. (4) Pregnant people do not appear to be at higher risk of infection with COVID-19 than the general population. (4) 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 (i.e., people with comorbidities) or an inability to promptly return to hospital. (5) 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). (5) The WHO home care guidance does not provide recommendations specifically for an intrapartum pregnant population with mild illness. (5)

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. (6) The use of droplet and contact precautions at all clinical encounters is recommended as best practice. If adequate PPE is available and appropriate infection prevention and control (IPAC) practices can be 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

Limited evidence 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. (4)
- **Vertical transmission:** Vertical transmission remains rare although emerging evidence suggests that it may be possible. 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. (7–10) Further research is required before we understand the proportion of pregnancies that are affected and the significance to the neonate. (11)
- **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. (4)
- **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. (10)
- **Outcomes for birthing parents:** The large majority of pregnant people who present with COVID-19 recover well. Admission to ICU occurs in approximately 7% of cases, death is exceedingly rare occuring in just 0.9% of cases. (12) Normal pregnancy alone, is not a risk factor for poor prognosis. (1)

- Pregnant individuals with pre-existing medical conditions such as lung or heart disease and diabetes were more at risk of becoming unwell and requiring admission to hospital. (13) This is consistent with evidence from the general population. Clinical decompensation may be possible in the postpartum period. (14) 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:** Outcomes for neonates have generally been very good. Spontaneous and iatrogenic preterm labour was the most commonly reported adverse pregnancy outcome in the case reports. Apgar scores at 1 and 5 minutes have all been greater than 7. NICU admission rates are similar between newborns born to parents with or without a COVID-19 infection. (15) Most newborns, if infected, have mild symptoms and recover completely. Perinatal deaths are very rare occurring in less than 1% of cases. (16)

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. (3)

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.**
    - Chinese neonatal outcomes were largely favourable even for the cohort of clients who had pneumonia.

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 is recommended while providing care to the client at home.**
    - The use of droplet/contact precautions at all births is the recommended approach in Ontario's Maternal-Neonatal COVID-19 General Guideline. (2)
    - Midwives may also consider the use of a mask by the labouring person for all stages of labour, if tolerated. (2)

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[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). (21)

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. (17)

    - 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. (17)

    - 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". (18) 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 (19), 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)

Midwives can use their knowledge and judgement, informed by available evidence, to determine whether contact and droplet precautions are required in the home setting.

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. (20)
    - Studies have found that natural ventilation (completely open windows and doors) achieved very high air change rates, exceeding minimum standards. (20)
    - Create cross-ventilation by opening windows or doors opposite from one another allowing outdoor air to flow across a room.
        - 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.
    - 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.
        - As temperature drop, consider opening windows for short periods of time to allow for air flow and then closing again to maintain adequate room temperatures.
    - Keeping the room temperature warm for the birth of the infant should be kept in mind and weighed against cross ventilation considerations.
        - In colder climates when using a window for ventilation, it may be necessary to provide additional heating such as personal heaters to maintain comfortable indoor temperature.
        - If using heaters, air flow should be directed away from the client's breathing space.

- **Use of PPE:** The use of droplet/contact precautions at all births is recommended as best practice.
    - In time of PPE shortages, the WHO recommends that PPE use is rationalized and appropriate, as overuse of PPE will have further impact on supply shortages. (21) As such, stewardship[3] is an important principle in ethical decision-making regarding use of PPE when resources are scarce.
- **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.

[3] Stewardship may be defined as upholding principles for use of available PPE carefully and responsibly by: ensuring PPE use is consistent with best available evidence, prioritizing access to scarce PPE based on risk of exposure and pathogen transmission dynamics and extending the life of PPE as appropriate. (23)

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