

## CHAPTER 4

### CARE DURING LABOUR AND BIRTH



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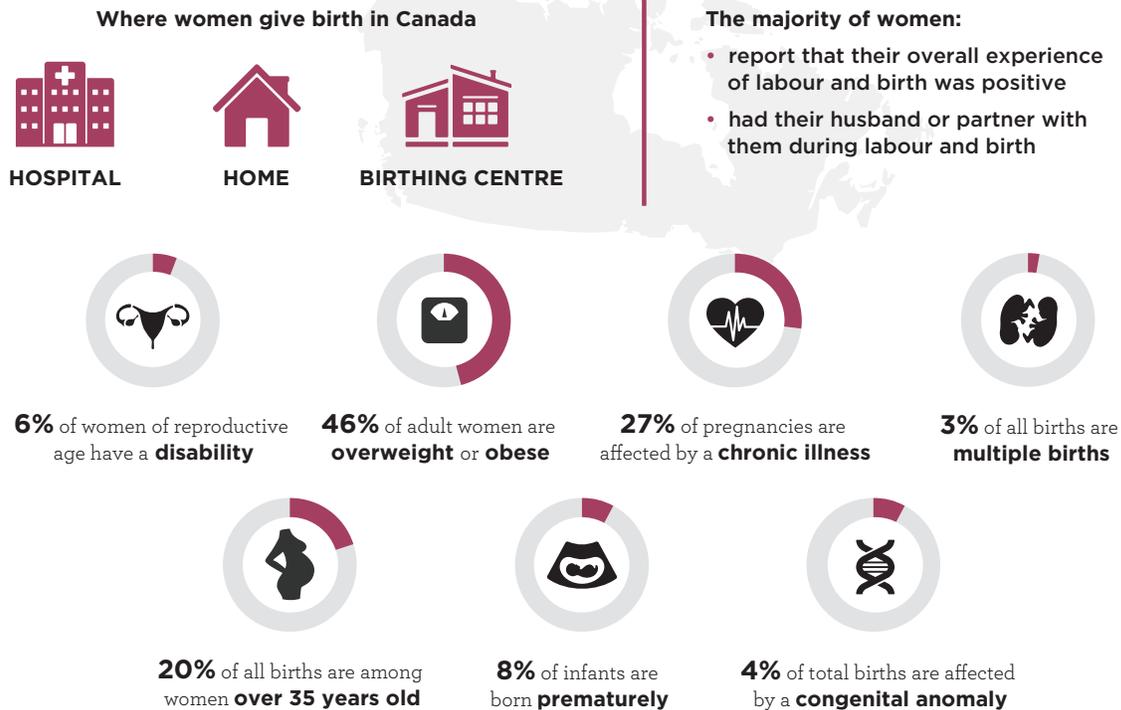
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# **CHAPTER 4**

CARE DURING LABOUR  
AND BIRTH

# LABOUR AND BIRTH IN CANADA

## 389,912 births a year in Canada



## INTERVENTIONS

**Epidural** rates have **RISEN** from 53.2% in 2006/07 to 57.8% in 2015/16.

**Induction** rates have **RISEN** from 12.9% in 1991/92 to 21.8% in 2004/05.

**Assisted vaginal birth** rates have **DECLINED** from 17.4% in 1991/92 to 13.2% in 2015/16. The rate of **vacuum extraction** has **INCREASED** from 6.8% to 9.2% while the rate of **forceps-assisted birth** has **DECLINED** from 11.2% to 3.4% over that same period.

**Caesarean births** have **RISEN** from 17.6% in 1995/96 to 27.9% in 2015/16.

**Vaginal births after caesarean (VBAC)** have **DECLINED** dramatically, with the **repeat caesarean birth** rate having **INCREASED** from 64.7% in 1995/96 to 81.0% in 2015/16.

For references consult **Chapter 4: Care during Labour and Birth** in: Public Health Agency of Canada. Family-Centred Maternity and Newborn Care: National Guidelines. Ottawa (ON): PHAC; 2018.



## FAMILY-CENTRED LABOUR AND BIRTH EXPERIENCE

Birth is a natural process that should be promoted by all maternal and neonatal health care providers.

Support for women during active labour and birth significantly increases a family's satisfaction with the birth experience, reduces the use of medications and interventions and enhances the positive attitude women need to care for their babies.

The overall aim of caring for women during labour and birth is to engender a positive experience for her and her family while maintaining her and her baby's health, preventing complications and responding to emergencies.

Whichever provider the woman and her family decide upon, interprofessional collaboration is needed to facilitate optimal maternal and newborn safety, particularly if care is transferred to or shared with other professional group members.

Key family-centred care recommendations:

- Women have supportive care involving the continuous physical presence of a caregiver during active labour and birth.
- Health care providers (HCPs) establish a rapport with women and ask them about their wishes and expectations for labour and birth. Throughout labour and birth, communication needs to be ongoing and responsive to the women's needs.
- Hospitals and birthing centres are encouraged to develop protocols and policies supporting traditional birthing customs and cultural practices.
- Women are treated with respect; supported in the process of continued informed choice throughout labour and birth; and encouraged to actively participate in their care decisions.
- HCPs demonstrate mutual respect and communicate and collaborate effectively, recognizing the vital role each plays in providing a safe and satisfying childbirth for women and their families.
- Maternal and newborn interventions only occur when the reasons to do so are well documented and evidence based.
- Develop processes that allow women to provide feedback on their experiences and their satisfaction with the policies and programs. Also engage them in the further development of policies and programs.
- The adoption of new technologies in labour and birth will have been accompanied by rigorous evidence to show their benefit for mothers and their babies, their cost effectiveness and their compatibility with professional guidelines.

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For most women and families, labour and birth is a time of excitement and anticipation, along with uncertainty and anxiety. Giving birth represents a major transition in a woman's life. The memories and experiences of labour and birth remain with a woman throughout her life, meaning that the support and care she receives during this time is critical. The overall aim of caring for women during labour and birth is to engender a positive experience for women and their families while maintaining their health and the health of their babies, preventing complications and responding to emergencies.

Many elements influence the care a woman receives during labour and birth. These include staffing patterns, policies and standard procedures, as well as the attitudes and expectations of health care providers (HCPs). These in turn reflect the local culture and the interaction of national, regional and professional policies—all of which are governed by beliefs, traditions and established norms. The focus on birth as a medical rather than a personal event risks minimizing the importance of support, coping and attachment as well as the healthy nature of the event for most women.

It is important that everyone who provides maternal and newborn health care is committed to promoting and supporting normal childbirth as supported by best evidence.<sup>1</sup> It is key that maternal and newborn interventions only occur when the reasons to do so are well documented and evidence based. Similarly, the mother, with respect to her care, or parents, with respect to care for the infant, need to be informed of the risks and benefits of their choices as well as any alternatives to these.



## 1 MATERNAL EXPERIENCES OF LABOUR AND BIRTH

Family-centred care is guided by the health needs, values and preferences of each woman and her family—within her social and cultural context. Such care advocates that “each childbearing woman and her family ... be treated as if they are extraordinary.”<sup>2, p.43</sup> Providing family-centred care congruent with a woman's values and wishes is more likely to result in a positive experience of labour and birth.

Women have diverse experiences and needs. People hold different philosophies of birth, based on their specific knowledge, experience, culture, social and family background and belief systems. Support and care needs to be respectful of such factors. Some women have negative, fearful feelings about birth, resulting in either a reluctance to take charge of their own care or a need to over-control. These feelings need to be

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> **ADDITIONAL RESOURCES ON CARE DURING LABOUR AND BIRTH: SEE APPENDIX A**

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acknowledged. The best approach to caring for women and families involves adapting care to meet their needs, rather than expecting them to adapt to the institution or to provider preferences.

A woman experiences her labour and birth and the care she receives, from her own unique perspective. Many things will contribute to her perception: her knowledge about and experience of birth, the support and quality of the care she and her baby receive, the events of her birth—and how they compare to her expectations, her social situation surrounding her birth and other factors.<sup>3,4</sup> Studies suggest that a woman’s positive birth experience may improve her adjustment to parenting, her self-care and her follow-up care and have a lasting, even lifelong, effect on her psychological wellbeing and the future health of her child.<sup>5-7</sup>

“ Listening to women’s experiences of labour and birth means that policies, programs and practices can be based on their needs as well as the best research evidence.

According to the *Maternity Experiences Survey (MES)*, 80% of Canadian women report that their overall experience of labour and birth was “very positive” or “somewhat positive”. Women giving birth to their second or subsequent babies were more satisfied than those having their first baby. Women also reported high levels of satisfaction with the care they received from their HCPs: about three-quarters of women were “very satisfied” with the respect shown to them, the perceived competence of the HCP, the concern shown for their privacy and dignity and with their personal involvement in decision making; about two-thirds were “very satisfied” with the compassion and understanding shown to them and the information given to them.<sup>3</sup>

However, women’s experiences differ. For example, according to the *MES*, the use of medical interventions and technology varied widely across provinces and was higher in the provinces than in the territories. Younger mothers and those with low educational levels and low income frequently reported less favourable maternity experiences. They were also more likely to report not having enough information about pregnancy and birth. The women in Nunavut, for example, reported lower satisfaction with their maternity experiences and a lower likelihood of having a husband or partner present during labour and birth or reporting that their baby was in excellent health.<sup>3</sup>

Listening to women’s experiences of labour and birth means that policies, programs and practices can be based on their needs as well as the best research evidence. As part of a quality assurance process, hospitals, birthing centres and those providing labour and birth care at home can have mechanisms that allow women to provide feedback on their experiences and their satisfaction with the policies and programs in place; they can also engage them in the further development of policies and programs. Accreditation Canada stresses the importance of developing a quality improvement system to continually monitor, evaluate and improve the quality of services. Feedback from women and families is one mechanism such a system can use.<sup>8</sup> Encouraging families to come forward with their concerns and their stories would be another way to promote change.





## 2 FAMILY PARTICIPATION, SUPPORT AND PLANNING FOR LABOUR AND BIRTH

### 2.1 BIRTH PLANS

A birth plan is a tool for a woman to articulate her preferences and hopes for childbirth, to build trust with her care team and to receive necessary information. Similarly, creating a birth plan provides a way for HCPs to learn about a woman's preferences, build trust with her and her family and identify opportunities for education and support. Developed collaboratively during prenatal care, a birth plan helps families and HCPs discuss their respective expectations. When a woman is admitted into the facility where she will give birth, it is important that HCPs ask about her birth plan and discuss her expectations and wishes, if they have not already done so. Research has shown that a woman's satisfaction with her birth experience is positively affected when more of the requests on her birth plan are accommodated.<sup>9</sup> Additional research is needed to explore the advantages and disadvantages of birth plans.

“ Support for women during active labour and birth significantly increases a family's satisfaction with the birth experience, reduces the use of medications and interventions and enhances the positive attitude women need to care for their babies.

### 2.2 SUPPORTIVE CARE IN LABOUR

Support for women during active labour and birth significantly increases a family's satisfaction with the birth experience, reduces the use of medications and interventions and enhances the positive attitude women need to care for their babies.<sup>10</sup> Implicit in the recognition of the mother's need for physical and emotional support is the need for each family to determine who will offer her support during labour and birth. According to the *MES*, the majority of women had their husband or partner with them during labour and birth (95% and 92%, respectively) and 36% were accompanied by someone other than their husband or partner.<sup>3</sup>

The Mother-Friendly Childbirth Initiative considers continuous emotional and physical supportive care with unrestricted access to a birth companion of the woman's choosing part of their philosophical principles. A recent review of studies found that women who received continuous labour support were more satisfied with their labour experience; had shorter labours; were less likely to have operative or assisted births (e.g., caesarean, vacuum or forceps); and were less likely to use pain medication. Continuous support was not associated with any negative outcomes.<sup>10</sup> Supportive care during labour was defined as physical comfort measures, continuous presence, information, emotional support and advocacy. The support could be provided by hospital personnel, for example, nurses or midwives; a doula or caregiver who did not have a personal relationship with the

labouring woman or were not hospital employees; or by the woman's partner, female relative or friend. The review concluded that "continuous support from a person who is present solely to provide support, is not a member of the woman's own network, is experienced in providing labour support, and has at least a modest amount of training (such as a doula), appears beneficial. In comparison with having no companion during labour, support from a chosen family member or friend appears to increase women's satisfaction with their experience."<sup>10, p.3</sup>

It is recommended that women have supportive care involving the continuous physical presence of a caregiver during active labour and birth. Supportive care encompasses physical support (comfort measures such as massages, touch, encouraging mobility, etc.); emotional support (encouragement, continuous presence, reassurance); informational support; and advocacy on behalf of the women.<sup>10</sup>

### 2.3 SIBLING INVOLVEMENT IN BIRTH

A key component of family-centred maternity and newborn care (FCMNC) is the focus on the family as the woman defines it. Women differ in their wishes about who they want close by during their labour and birth. For instance, some families may plan to have their children present to witness the arrival of their new sibling.

**“ The overall aim of caring for women during labour and birth is to engender a positive experience for her and her family while maintaining her and her baby's health, preventing complications and responding to emergencies. ”**

Currently, approximately half of Canadian hospitals (45%) encourage the presence of siblings during labour, but with restrictions; 38% do not encourage their presence; and 17% encourage their presence with no restrictions.<sup>11</sup> The most common restrictions to having a sibling present during labour and birth are<sup>11</sup>:

- Another adult has to be present to support or care for the child;
- The physician or midwife decides to not have the sibling present;
- The number of people in the room;
- The age of the sibling.

It is recommended that hospitals and birthing centres have policies on sibling involvement in birth that support families' choices while ensuring the children's wellbeing and safety. If a child attends the birth, an adult whose sole responsibility is to support and care for the child should be present to take care of all of the child's needs, for example, making sure that they have eaten and are rested. If the child indicates they want to leave, they should be allowed and helped to do so. It is particularly critical that someone care for and support the child in emergencies.

### 2.4 COMMUNICATION WITH MOTHERS, PARTNERS AND FAMILIES DURING LABOUR

Giving birth is a time of excitement and anticipation, but it can also be a time of uncertainty, anxiety and even fear. The support and care women and families receive during this time is critical. The overall aim of caring for women during labour and birth is to engender a positive experience for her and her family while maintaining her and her baby's health, preventing complications and responding to emergencies.



A recent review of the importance of communicating with women and families during childbirth concluded that the way caregivers relate with the labouring women impacts the woman's experience of birth. The review identified a number of important themes to do with communication. The first is that women value being treated as individuals, with respect and care. The second is that most women need information and explanations if they are to feel guided and supported throughout the birth. The authors summarized the review findings in the words the interviewed women used to describe the feelings that encompassed a positive birth experience: caring, considerate, understanding, competent, trustworthy, empathic, tender, kind, friendly, calm, alert, peaceful, and unhurried. They concluded that “women want to receive information and assistance, to be involved, to feel safe and secure, to feel at ease and to be able to be themselves.”<sup>12</sup> These principles also apply when complications or emergencies arise during labour or birth and when communicating negative outcomes.

As described in Chapter 1, central to FCMNC is the concept that all women are treated with respect. Furthermore, FCMNC means that women are the primary decision makers about their own care. Communication is central to this involvement. At the beginning of labour, caregivers need to establish a rapport with women (if they have not already done so) and

ask them about their wishes and expectations for labour and birth, which may be expressed in a birth plan. Throughout labour and birth, communication needs to be ongoing and responsive to the women's needs.<sup>13</sup>

It is critical that caregivers are aware of their tone, demeanour and language when communicating with women during labour and birth. Because words and the way they are spoken can reflect attitudes of respect or disrespect, inclusion or exclusion, and judgment or acceptance, language choices can ease or impede communication.

Women who give birth in Canada are culturally and linguistically diverse. Every effort must be made to help them communicate effectively with their caregivers in their preferred language. Ideally, hospitals and birthing centres have policies that allow cultural and language interpreters to assist women and families.<sup>13</sup>

#### COMMUNICATION GUIDELINES DURING LABOUR AND BIRTH<sup>12</sup>

- Welcome the woman and her family/support person in a personal manner and explain your role in her care.
- Be calm and confident to reassure the woman.
- Knock and wait for a response before entering the woman's room.
- Ask about her feelings and concerns.
- Read and discuss her birth plan with her.
- Assess the woman's need for knowledge about pain management.
- Ask her permission before performing a procedure.
- Remain focused on the woman rather than the technology or the documentation.
- Let the woman know when you will return before leaving the room.
- Engage the woman in communication with other HCPs or referrals.



### 3 CULTURAL CONSIDERATIONS

The women who give birth in Canada are a diverse group—particularly from an ethnocultural perspective. Awareness of the influence of culture on the unique needs, hopes and expectations women have during labour and birth is important. Providers need to understand women’s backgrounds—their place of birth, how long they have been in Canada and their support networks.<sup>14</sup> Even when the necessary services are available, women who are immigrants may face barriers related to access and use of these services because of a lack of awareness, language barriers and differences in cultural practices and expectations.<sup>15</sup>

Cultural competence—or cultural awareness and sensitivity—is defined as “the knowledge and interpersonal skills that allow providers to understand, appreciate, and work with individuals from cultures other than their own. It involves an awareness and acceptance of cultural differences, self-awareness, knowledge of a patient’s culture, and adaptation of skills.”<sup>16, p.73</sup>



Providing culturally competent care means upholding dignity, valuing differences, being inclusive and maintaining equity; it is critical to positive, healthy outcomes and needs to be integrated into the policies and procedures for labour and childbirth at all hospitals and birthing centres. HCPs need to be educated in culturally competent care. Providers need to assess their beliefs, values and practices, and those of women and families in their care.<sup>14</sup> Reflective questions may help HCPs assess their own knowledge of and behaviour related to diversity issues. Avoiding stereotypical assumptions based on culture and ethnicity and recognizing that each family is unique in how they apply their own mixture of cultural traditions is vital.<sup>14,17</sup>

Communication with families from various cultural backgrounds can be challenging: it involves understanding subtle variations in meaning and style and paralinguistic features such as volume and gestures.<sup>14</sup> Because of the increasing diversity of the Canadian population, hospitals, birthing centres and other agencies often use interpreters. Effective interpreters speak the same language, know specific health-related vocabulary, and are trusted with private information. In addition, gender may be a factor given the personal nature of birth. Ideally, interpreters would share the same religion and country of origin as the woman and her family.<sup>14</sup> Using children or family members as interpreters is not recommended.



Women and families will interpret the culture of health care within the context of their own culture and experience. While HCPs may not agree with all cultural practices, it is important to respect families' needs and decisions. This family-centred approach must be considered within the context of Canadian practices and regulations. Listening to the women's and families' stories about their own culture, childbearing practices and needs helps accomplish this.<sup>14</sup>

A growing number of uninsured women are giving birth in Canada.<sup>19,20</sup> The reasons for this are likely related to global migration patterns and changes in Canadian immigration policies.<sup>19,21</sup> Women without health insurance are more likely to have suboptimal or no prenatal care and fewer prenatal records.<sup>19</sup>

Ethical and medico-legal standards do not support withholding emergency treatment including care during labour or obstetrical concerns. If an uninsured woman arrives at a hospital birthing unit or birthing centre, she needs the appropriate care. Physician and facility fees can be invoiced or collected subsequently, but potential lack of payment should not affect access to treatment.

It is important that hospitals and birthing centres in jurisdictions with a significant proportion of possibly uninsured migrants and/or refugees have policies and protocols that address the needs of all families. Where services are available for uninsured residents through a midwife, birthing centre or community health centre, it is important that uninsured women be referred for further care when possible.

### QUESTIONS TO FACILITATE COMMUNICATION ABOUT VALUES AND BELIEFS<sup>18</sup>

- If families are newcomers to Canada, ask about their place of birth, how long they have been in Canada and their support systems.
- To ensure that women have an opportunity to express their needs, other questions to consider asking are:
  - > What do you and your family believe you should do to remain healthy during childbirth?
  - > What is health care like in your homeland/culture?
  - > What can you do to improve your health and the health of your baby? What *can't* you do?
  - > What do you and your family expect from the nurses, midwives and doctors caring for you?
  - > Do you have an interpreter? How do you want your interpreter to help you while you are in labour?
  - > What are your goals and desires for childbirth?
  - > Do you have beliefs about birthing that I need to know about?
  - > Are there any particular home remedies and foods you might eat/drink during childbirth?
  - > How would you like to take care of yourself during labour? What would you like to do to manage pain during childbirth?
  - > Which support people do you wish to have with you?
  - > How do you want your support people to participate in your labour and birth?
  - > Who do you want to involve in decision making?
  - > What is important to you after your baby is born?

### 3.1 INDIGENOUS WOMEN AND FAMILIES

Indigenous women want to incorporate their culture and societal values and beliefs into their lives and childbirth.<sup>22</sup> Whether they live in Indigenous communities, on reserve or in urban settings, integrating cultural safety in the care of Indigenous women during labour and birth involves providing an environment of respect and communication, which is consistent with the principles of family-centred care. Indigenous women, as all women, need to feel safe, and building a trusting relationship with their HCPs and communities enables this.

Indigenous women in Canada are diverse in their culture, ancestry, beliefs and practices. Working with Indigenous women is about understanding their individual values, beliefs and needs and finding common ground. The Society of Obstetricians and Gynaecologists of Canada (SOGC) guideline, *Health Professionals Working with First Nations, Inuit, and Métis Consensus Guideline*, states that “health professionals should be aware that each First Nations, Inuit, and Métis community has its own traditions, values, and communication practices and should engage with the community in order to become familiar with these.”<sup>23, p.552</sup> Indigenous women speak many different languages—it is important that they receive care in their own language where possible and that the institutions caring for them have available interpreters and advocates from their community. The SOGC guideline also recommends that HCPs learn culturally specific communication practices and tailor communications to the specific situations and histories of their patients.

Historically, Indigenous women were at the centre of many of their communities—and giving birth was an integral part of life. Colonization has led to a loss of traditional values, beliefs and practices, including those surrounding birth. Currently, women are often transferred out of rural and remote communities to give birth, often remaining there after the birth—often alone. This can result in loneliness, insecurity,

culture shock and anxiety.<sup>23</sup> The SOGC guideline *Returning Birth to Aboriginal, Rural, and Remote Communities* encourages training programs and policies that facilitate the return of birth to rural and remote communities for woman at low risk of complications.<sup>24</sup> It is critical that Indigenous women who are labouring and giving birth without family or their own support person have appropriate continuous support throughout labour, arranged, for example, through local Indigenous organizations that offer support or doula services. It is also essential that institutions promote communication with the woman and her family and community and, for example, have adequate space for family members and enough chairs so that everyone, including the health professional, can be seated at the same level.<sup>23</sup>

Some Indigenous communities have high rates of sexual abuse. Survivors of sexual abuse or assault may face challenges during birth and risk being re-traumatized. The SOGC’s *Health Care Professionals Working with First Nations, Inuit, and Métis Consensus Guideline* provide suggestions on how to support women who have been abused. It is important they understand what is happening and what HCPs are doing throughout each step of care. In addition, HCPs need to be mindful of body language/position and verbal language.<sup>23</sup>

Hospitals and birthing centres are encouraged to develop protocols and policies supporting Indigenous women’s wishes for traditional birthing customs, such as access to the placenta, smudging, use of sweet grass and traditional foods and medicines, among others. Hospitals and birthing centres are also encouraged to respect and advocate for institutional policies supporting Indigenous women’s and families’ wishes should they experience a loss, for example, a baby may need to be discharged for ceremony and burial within 24 hours.

See the *Health Professionals Working with First Nations, Inuit and Métis Consensus Guideline* for further information on providing culturally safe care for Indigenous women and families.<sup>23</sup>



## 4 PLACE OF BIRTH AND HEALTH CARE PROVIDERS

### 4.1 PLACE OF BIRTH

According to the *MES*, 98% of women gave birth in a hospital, just over 1% (1.2%) gave birth at home and less than 1% (0.8%) gave birth in birthing centres. Five jurisdictions reported out-of-hospital births. The proportion ranged from 2.9% in Ontario to 0.9% in Alberta.<sup>3</sup> More recent data also indicates that 3.5% of births in British Columbia took place at home.<sup>25</sup> Regardless of where women give birth, the principles of FCMNC as outlined in Chapter 1 apply to all environments.

#### Hospital

The majority of women in Canada give birth in hospital under the care of a physician. In fact, childbirth is the most common reason for hospital admission.<sup>26,27</sup> In order to provide family-centred care it is recommended that hospitals:

- Allow women unrestricted access to the birth companions of their choice, including the father or other partner, children, doulas, family members or friends;
- Enable women to have unrestricted access to continuous emotional and physical support from a skilled caregiver;
- Provide culturally competent care—that is, care that is sensitive and responsive to the specific beliefs, values and customs of the mother’s ethnicity and religion;

- Enable women to labour, give birth and receive immediate postpartum care in the same room;
- Have clearly defined policies and procedures for clinical care that are based on current evidence and guidelines and that support normal childbirth and avoid unnecessary interventions;
- Have clearly defined policies and procedures for collaborating and consulting with other maternity and neonatal services throughout the perinatal period, including with the original caregiver when transfer from one birth site to another is necessary;
- Have clearly defined policies and procedures for linking the mother and baby to appropriate community resources, including postpartum follow-up and breastfeeding support;
- Provide accurate descriptive and statistical information to the public about its practices and procedures for birth care, including measures of interventions and outcomes.

Recent evidence from the *Canadian Hospitals Maternity Policies and Practices Survey (CHMPPS)* and the *MES* indicates that Canadian hospitals have, in some cases, moved towards embracing practices based on family-centred care. Hospitals are now more likely to include families in labour and birth; to have policies stipulating that the woman receive continuous labour support from a skilled caregiver; have a single-room system; and have policies based on evidence that

support normal childbirth. Nevertheless, certain areas still need improvement—the high rates of caesarean birth, use of continuous electronic fetal monitoring (CEFM) for women without risk factors and the number of women giving birth in a supine position. Continued promotion of early skin-to-skin contact and breastfeeding also need attention.<sup>3,11,28–30</sup>

### Out-of-hospital birth

In a number of jurisdictions in Canada, women also have the option of giving birth outside of the hospital. The re-emergence of midwifery has contributed to this. Midwifery is regulated in the majority of provinces and territories, and in most jurisdictions midwives can support birth at home and hospitals. Midwives can also provide services at free-standing birthing centres in some areas, such as Ontario (Ottawa and Toronto) and Alberta (Edmonton and Calgary).<sup>31,32</sup>

Care for labouring women outside of the hospital setting is generally similar to care for women with low-risk pregnancies in the hospital setting. It is important that caregivers be vigilant that labour is progressing normally and remains low risk.<sup>33</sup> Additional factors for HCPs to consider is the availability of a second attendant; the length of time for hospital transport; and the availability of emergency services and ease of transport, which may be affected by the weather or road conditions. In addition, midwives need to consider the availability of emergency personnel to provide obstetric, pediatric and anesthetic care at the receiving facility.<sup>34–36</sup>

Some women and families may choose to act against caregiver recommendations and stay home despite transport to hospital being recommended. It is important to ensure that the woman and her family are well informed; that the care and conversations/decisions are well documented; and that HCPs work within their professional scope of practice.<sup>37</sup> In cases when women refuse transfer, the *Canadian Association of Midwives' Position Statement on Home Birth* states “it is a midwife’s ethical duty to remain with the woman and offer her midwifery skills in the home setting to the degree that the woman

will accept care”.<sup>33, p.1</sup> Patient care conferences that involve both hospital providers and midwives may be appropriate in these situations.

## 4.2 HEALTH CARE PROVIDERS

Various HCPs may participate in the care of women, babies and families during labour and birth. Each has a specific role and scope of practice and each contributes to a coordinated and effective care team. The team may comprise family physicians, midwives, nurses, obstetricians, maternal–fetal medicine specialists, neonatologists, pediatricians, and anesthesiologists, depending on the availability of these HCPs where the birth is to occur, the presence of maternal or fetal risk factors and the woman’s choice. Choosing an HCP with the optimum skills for the required level of care is best. There are concerns in Canada regarding a shortage and unequal geographical availability of maternity HCPs.<sup>32</sup>

Whichever provider(s) the woman and her family decide upon, interprofessional collaboration is needed to facilitate optimal maternal and newborn safety, particularly if care is transferred to or shared with other professional group members. It is essential that all HCPs demonstrate mutual respect and communicate and collaborate effectively, recognizing the vital role each plays in providing a safe and satisfying childbirth for women and their families, complementing each other in providing care for the women and families, and observing each other’s respective competencies and limitations so that all confer, consult and transfer care when appropriate.<sup>32</sup>

“ Interprofessional collaboration is needed to facilitate optimal maternal and newborn safety, particularly if care is transferred to or shared with other professional group members.

### 4.3 DOULAS

Women have historically been supported by other women during labour and birth. When giving birth became hospital-based in most countries, it was common for women to labour and give birth without the support of partners or other loved ones. Over the years since, it has become commonplace for partners and others to accompany a woman throughout her labour and birth and today, it is rare to see women alone, the value of support in labour having been recognized as an essential component of maternal and newborn care.

Some labouring women may be accompanied by a doula, a trained and experienced provider who offers continuous physical, emotional and informational support to the mother before, during and immediately after birth and emotional and practical support during postpartum.<sup>38</sup> Doulas do not perform any clinical tasks, diagnose medical conditions, offer personal opinions or give medical advice; they provide support for women who choose a hospital or out-of-hospital birth either with a physician or midwife.<sup>10</sup>

According to the *CHMPPS*, 48 Canadian hospitals (16%) had a written policy about the provision of labour support by a doula. Of these, 10 restricted doula support to those certified by the Doulas of North America (DONA) or the International Childbirth Education Association. However, 87% of hospitals reported that hardly any women received this support and 13% indicated that less than half did.<sup>11</sup>

The doula in no way takes away from the role of the partner, but rather enables them to be involved at their own comfort level. The doula recognizes that birth is a shared experience with long-term implications for families. Couples have stated they feel their relationship with their partner and their baby is better because of the supportive, continuous presence of a doula.

Many models of doula care exist, from those in private practice, community and hospital-based programs and volunteer-based programs. It is recommended that hospitals have policies that support doula care, recognizing doulas as part of the team.<sup>39</sup> An agreement between doula associations and hospitals may help promote positive relationships and clarify expectations with respect to roles, outcomes and goals.



## 5 NATURAL/ NORMAL BIRTH

Representatives from various Canadian organizations have come together to define normal labour and birth through a joint policy statement.<sup>1</sup> The goal is to promote, protect and support normal birth, recognizing the increase in the use of technology and interventions in maternal and newborn care.

The recommendations of the joint policy statement focus on the “development of frameworks addressing philosophy and practice expectations,” as well as education and promotion of both the normal and the natural childbirth process.<sup>1, p.1164</sup>

The SOGC defines normal labour as:<sup>1</sup>

- Having a spontaneous onset at 37<sup>o</sup> to 42<sup>o</sup> weeks gestational age with progress in labour leading to a spontaneous (normal) birth with a normal third stage;
- Possibly including pharmacological (opioids/ inhalation) and non-pharmacological analgesia and routine oxytocin for the third stage;
- Possibly including interventions appropriate to the circumstances to facilitate labour progress, for example, augmentation of labour, artificial rupture of the membranes if it is not part of a medical induction of labour, pharmacological pain management including an epidural, and intermittent fetal auscultation.

In addition, the SOGC defines a normal birth as one that:<sup>1</sup>

- Does not include spinal or general analgesia or elective induction prior to 41<sup>o</sup> weeks;
- Is not assisted by forceps, vacuum or caesarean section and does not include a malpresentation;
- Has the infant born in a vertex position;
- Offers the opportunity for skin-to-skin contact and breastfeeding within the first hour;
- May occur with a complicated or abnormal labour.



In the UK, the Maternity Care Working Party (a group of maternity care organizations, including the Royal College of Obstetricians and Gynaecologists and the Royal College of Midwives) does not distinguish between *natural* and *normal* delivery and refers to normal labour and birth as *normal delivery*. It defines *normal delivery* as one that has a spontaneous onset of labour and progresses without drugs and where the birth is spontaneous.<sup>40</sup> It is achieved without<sup>40</sup>:

- Induction;
- Use of instruments;
- Episiotomy;
- Caesarean section;
- Epidural, spinal or general anaesthesia.

The Maternity Care Working Party followed 2 guiding principles in developing this definition. They excluded interventions that interfere with labour or are unjustified in the vast majority of cases, using only objective parameters with commonly accepted definitions.<sup>40,41</sup>

The principles of FCMNC state that birth is a natural process that should be promoted by all maternal and neonatal HCPs. Women are treated with respect; supported in the process of continued informed choice throughout labour and birth; and encouraged to actively participate in their care decisions. Valid evidence-based reasons alone determine a change in the natural process when labour and birth is progressing normally.<sup>1</sup>

It is recommended that HCPs develop interprofessional committees to promote normal labour and birth. These committees would ideally also engage women and their families. Goals would include interprofessional education on labour support and the integration of evidence-based practices into policies. Promotion of expert knowledge and skills in normal childbirth among HCPs is to be encouraged.



## 6 HIGH-RISK PREGNANCIES/ BIRTHS AND SPECIAL CIRCUMSTANCES

### 6.1 ADVANCED MATERNAL AGE

Approximately 13% of first births and 20% of all births are among women over 35 years, and this proportion of the Canadian population is increasing.<sup>42</sup> Some evidence suggests that women over 35 years and particularly those over 40 years may face increased maternal and fetal complications. Some of these outcomes may be affected by increased use of assisted reproductive technologies as well as age-related diseases and medical conditions. Complications include higher rates of perinatal mortality such as stillbirth, placenta previa, pregestational diabetes and hypertensive diseases. As a result, these women may also be more likely to require induction of labour. Other factors like multiple gestation, higher parity and underlying chronic medical conditions are also more prevalent.<sup>43</sup>

A review of outcomes of pregnancy and birth among women with advanced maternal age identified a number of complications among older mothers<sup>43</sup>:

- The caesarean birth rate in women over 40 years old was 41% compared to the national average of 26%.
- Women 35 years and over had preterm birth rates 20% higher than women aged 20 to 34 years.

- Women 35 years and over had babies who were small for gestational age at a rate 7% higher than women 20 to 34 years of age.
- Women over 40 were at least 3 times more likely to develop gestational diabetes and placenta previa than younger women.
- Women over 40 were 4 times more likely to have chromosomal abnormalities.

As a result of these findings and findings from observational population studies, some practitioners and centres have modified their obstetrical management for women aged 40 and over. Increased fetal surveillance in late pregnancy assessments via non-stress tests and amniotic fluid index or biophysical profiles may be required, and HCPs may offer induction at term. The SOGC guideline *Induction of Labour* states that, given the higher risk of stillbirth for women 40 years and older, the pregnancy could be considered biologically post term at 39 weeks, a point that caregivers are recommended to discuss with women.<sup>44</sup> The SOGC guideline *Management of Spontaneous Labour at Term in Healthy Women* also suggests that the length of the first stage of labour increases with maternal age.<sup>45</sup>

As with all women, the care requirements of a woman 40 years or older need to be considered on an individual basis, and her care planned based on evidence and her needs.

## 6.2 WOMEN WITH ACUTE AND CHRONIC MEDICAL CONDITIONS

Due to the advances in medical treatment and care planning, more women are coming to pregnancy with chronic illnesses. About 27% of pregnancies are affected by a chronic illness. The most common conditions are asthma, hypertension, diabetes, epilepsy and mental health disorders.<sup>46</sup> Women may also have pregnancies complicated with acute episodes of illness that require medical treatment or surgery in pregnancy, for example, gestational diabetes, high blood pressure or symphysis pubis dysfunction. Some chronic and acute medical conditions require specialized care provided by a team of HCPs during labour, birth and postpartum. Such a team can include obstetricians/maternal–fetal medicine specialists, physicians specializing in the women’s disorders, physiotherapists, anesthesiologists, neonatologists, social workers, dietitians, pharmacists, pain management specialists, advanced practice nurses and registered nurses. This team can plan not only the prenatal and postnatal care critical for her health and that of the baby, but also the necessary care during labour and birth. The plan of care during labour may include additional laboratory investigations, hemodynamic monitoring, continuous fetal health surveillance and specific positioning or pain management, as well as the woman’s preferences and choices if they can be safely accommodated.

Women and their families need to be included in the planning for their labour and birth. They need to be aware of their needs based on their condition and history. It is important to respond to a woman’s anxiety about her own and her baby’s wellbeing; to include family members in her and her baby’s care and to support them; and to provide information on the progress and health of the mother and her baby so the woman can make informed decisions based on her own unique preferences.



## 6.3 GROUP B STREPTOCOCCUS INFECTION

Neonatal infection with Group B streptococci (GBS) continues to be a leading cause of neonatal infection, and without intrapartum antibiotic prophylaxis, between 1% and 2% of infants born to GBS-positive women develop early-onset GBS disease. The incidence of neonatal infection has decreased significantly since the adoption of screening during pregnancy and prophylactic treatment in labour. The SOGC guideline *The Prevention of Early-Onset Neonatal Group B Streptococcal Disease* provides further recommendations on the management of labouring women.<sup>47</sup>

## 6.4 WOMEN WITH PHYSICAL DISABILITIES

Women with physical disabilities have significant challenges and barriers to receiving appropriate prenatal, intrapartum and postpartum care. In Canada, 6.2% of women of reproductive age have a disability.<sup>48</sup> Their disabilities are mainly related to pain, mobility and agility.<sup>49</sup> Women with disabilities have described the challenges with the care they received during labour and birth as being primarily due to a lack of communication between the HCPs who treat their disability and their obstetrical HCPs. In addition, they found a general lack of information about their care in labour and birth. Women with disabilities may also experience physical barriers caused by doorway widths, bed heights, and a lack of assistive devices.<sup>49</sup>

“ It is important to be aware of the mental health of the woman during her pregnancy, labour and birth and to watch for signs that require intervention in order to plan her care and that of her baby.

A team approach is essential to ensure that the information needs of women with disabilities are met; that a plan is developed prior to admission for labour and birth that will accommodate their needs; and that the appropriate equipment is provided for their safety and that of their infants.

## 6.5 WOMEN WHO ARE INCARCERATED

If an incarcerated woman is coming to a health care facility to give birth, it is important to plan her labour and birth as much in advance as possible. This requires a team approach. The goal is to achieve a labour and birth that meets the woman’s needs and ensures confidentiality while she and staff remain safe. A copy of the woman’s prenatal records will help in planning her care. Immediate screening and treatment for infectious diseases may be required if her prenatal records are not available. It is important that caregivers are respectful and address the woman’s unique needs. If she presents with security personnel, negotiating her privacy during her labour and birth while ensuring the safety of everyone in the birthing unit is essential. The woman would benefit from having a doula present during labour and birth if she does not have another support person present.

Corrections Service Canada has developed the Institutional Mother–Child Program, which allows an incarcerated mother to have her child or children reside with her. In addition, the Collaborating Centre for Prison Health and Education (CCPHE) and the University of British Columbia have developed *Guidelines for the Implementation of Mother–Child Units in Canadian Correctional Facilities*.<sup>50</sup> These evidence-based guidelines are founded on the principles that early mother–infant contact supports healthy development and that the child has the right to non-discrimination. The best interests of the child are an underlying principle, and the guidelines state that “it is in the best interests of the child to remain with her/his mother, to breastfeed and be allowed to develop a healthy attachment.”<sup>50, p.4</sup> The guidelines provide recommended policies, protocols and best practices for supporting women in custody who are pregnant, giving birth and are new mothers.<sup>50</sup>



## 6.6 WOMEN WITH MENTAL ILLNESS

Pregnancy and postpartum include significant psychological adjustments; the childbearing process has been described as a *psychological stress test*.<sup>51</sup> During labour and birth, HCPs may be caring for women diagnosed with a mental illness such as major or minor depression, anxiety, eating disorders or problematic substance use. Women may also have an undiagnosed mental illness that evolves during pregnancy. It is important to be aware of the mental health of the woman during her pregnancy, labour and birth and to watch for signs that require intervention in order to plan her care and that of her baby.

## 6.7 WOMEN WITH A HISTORY OF SUBSTANCE USE

Women who have a history of substance use require nonjudgmental supportive care during labour and birth. They may also need specialized care during labour and birth because of increased pain sensitivity, inadequate analgesia, difficult intravenous access and anxiety about suffering pain. The SOGC guideline *Substance Use in Pregnancy* provides further guidance.<sup>52</sup>

If a woman has problematic substance use, it is important to identify the substances that she may have used during her pregnancy to be prepared for the specific care that both she and her baby may need. Referral to other services may also be required. The SOGC recommends hospitals have protocols in place to manage the care of the baby exposed to opiates during pregnancy. HCPs need to discuss with the mother the specialized care that a baby born with neonatal abstinence syndrome will require.<sup>52</sup> Planning for skin-to-skin contact at birth, breastfeeding and rooming in with the mother can have a significant impact on maternal and newborn outcomes. Other non-pharmacological soothing techniques to treat an infant with NAS can include reducing stimuli in the environment, positional supports, swaddling, gentle handling, kangaroo care, and frequent, hypercaloric, smaller volume feedings are beneficial.

## 6.8 WOMEN WHO HAVE EXPERIENCED VIOLENCE

It is important during childbirth that HCPs not re-traumatize a woman with a history of exposure to violence. Women with a history of abuse require supportive and nonjudgmental trauma-informed care.<sup>53</sup> Trauma-informed care principles such as safety, trust, choice and control, compassion and collaboration have many commonalities with family-centred care.

Given the potential chronic physical and psychological implications associated with exposure to violence, the care of women who have experienced violence often needs to involve an interprofessional team including social workers or mental health specialists.<sup>54</sup> HCPs also need to consider the legal aspects of the situation if restraining orders are in place. Some women may request a female HCP.

## 6.9 WOMEN WHO ARE OBESE

The World Health Organization (WHO) has estimated that the prevalence of obesity doubled between 1980 and 2008.<sup>55</sup> The prevalence of overweight and obesity among Canadian women has increased from 41.3% in 2003 to 46.2% in 2014.<sup>56</sup> Women who are obese are more likely to be older, have higher parity and live in lower socioeconomic circumstances than other women.<sup>57</sup> Increasing levels (or class) of obesity are associated with increasing rates of preeclampsia, gestational hypertension and gestational diabetes.<sup>58</sup> Women who are obese have a higher risk for<sup>57,59</sup>:

- Stillbirth or neonatal death;
- Prolonged labour or slow progress;
- Shoulder dystocia;
- Emergency caesarean birth;
- Hemorrhage;
- Need for induction.

Canadian definitions for obesity are the same as those of WHO:<sup>60</sup>

Definition	Body mass index (BMI) category (kg/m <sup>2</sup> )
Overweight	25.0–29.9
Obese Class I	30.0–34.9
Obese Class II	35.0–39.9
Obese Class III	≥ 40.0

If a woman has a BMI greater than 30, preparation for labour and birth needs to include measuring her weight in the third trimester to ensure the availability of appropriate equipment for transfer and care. A consultation with an anesthesiologist, during pregnancy or intrapartum, can help to ensure that the woman discusses her risk of complications, for example, epidural insertion failure rate.<sup>59,60</sup>

Maternal obesity is not an indication for an induction, and a normal birth should be encouraged just as it is for all women and families. Nevertheless, it is important to explain the risks of an induction to women who are obese as they have a higher risk of a failed induction and an emergency caesarean birth can be a high-risk procedure.<sup>59</sup> The SOGC guideline *Management of Spontaneous Labour at Term in Healthy Women* also suggests that the length of the first stage of labour increases with maternal BMI.<sup>45</sup>

Babies born to women who are obese are up to 1.5 times more likely to be admitted to a neonatal intensive care unit than babies born to mothers with a normal BMI, and the likelihood of admittance increases with each class of higher BMI.<sup>59</sup> Prenatal ultrasound assessment may be affected by maternal size so that anatomical structures cannot be seen well. It is therefore important to involve neonatal services quickly if needed.

Women who are obese should be cared for as all women—with compassion, respect and dignity. Using respectful language affects the women's experience. It is also important that facilities have readily available gowns that fit all sizes and larger blood pressure cuffs, as well as equipment such as stretchers, wheelchairs beds and operating room tables built for heavier weights.

A number of potential challenges need to be planned for and addressed. It is important to be more vigilant around progress and assessment of labour and postpartum hemorrhage, and to be aware that initiating intravenous access may be challenging and involve specialized or experienced care. Fetal surveillance may also be challenging and involve internal monitoring, particularly with use of oxytocin, to ensure an accurate assessment of fetal heart rate and uterine activity.<sup>59</sup> Hospitals may wish to develop protocols regarding the management of obesity and triage to higher levels of care, if necessary. Proper social and financial assistance may help women who are obese who need to leave their home communities prior to labour.

## 6.10 SURROGACY

Surrogacy refers to a situation where a woman carries a pregnancy and gives birth to a baby on behalf of someone else (another woman or a man or couple). Women and families may seek surrogacy when either a pregnancy is not possible or the risks present an unacceptable danger to the mother's health.<sup>61</sup> Surrogacy can be traditional, with a surrogate mother contributing an egg, or gestational, with in vitro fertilization allowing the woman intending to parent the child to be genetically related.<sup>62</sup>

**“ In order to provide family-centred care for both the surrogate and her family and for the intended family of the infant, it is important to develop and discuss a plan for labour and birth ahead of time.**

During labour and birth, the surrogate may be accompanied by her own family or friends, or the intended family of the baby as a support. In order to provide family-centred care for both the surrogate and her family and for the intended family of the infant, it is important to develop and discuss a plan for labour and birth ahead of time. Similarly, it is important that hospitals create policies to direct the care that meets the needs and preferences of the families and infant(s). Prior to discharge, it is important to ensure that both families know of ongoing support such as community resources.



## 6.11 ADOPTION

The number of infant adoptions within Canada is declining because of many factors, including increased rates of contraception, abortion and single parenting.<sup>63</sup> Adoption is defined as the legal and permanent transfer of parental rights from a person or couple to another person or couple.<sup>64</sup> Adoptive parents have the same responsibilities and legal rights as biological parents. In Canada, the process and regulations are determined provincially and may differ slightly across the country. Processes for First Nations families are different, being based on specific cultural needs of families.

Based on the principles of family-centred care, families involved in adoption all need to participate in their own care and receive compassionate, nonjudgmental understanding from HCPs. Appropriate language is critical to the care of the relinquishing or birth mother, the birth father and the adoptive family. Referring to the woman giving birth as *real mother* or *natural parent* is best avoided.

The birth mother/parents may develop a birth plan that includes labour, birth and postpartum. Such a birth plan may be done in collaboration with the adoptive family. Plans may include traditional birth plan topics, such as labour pain management and infant feeding, and adoptive birth considerations such as having the adoptive parents present at birth and access to the infant after birth. The birth mother may need to have the birth acknowledged as a loss, with emotions that may range from sadness, relief, numbness and shock. Acknowledgement of her strength and courage as well as understanding that she is doing what she feels is best for the infant and herself is an important part of her care.<sup>65</sup> The birth father, if present, also needs to be acknowledged and assisted with any sense of grief and loss. The adoptive parents may be included in the birth in a way that is comfortable for the birth mother—their presence in labour and birth is her choice. Hospital policies and procedures that empower all of those involved are helpful in these circumstances and clarify the supportive role of HCPs.

## 6.12 WOMEN WHO HAVE EXPERIENCED FEMALE GENITAL MUTILATION/CUTTING

Reliable information on the rate of intrapartum and obstetric complications resulting from female genital mutilation/cutting (FGM/C) is sparse.<sup>65</sup> Current research suggests that women who have undergone FGM/C are more likely to have prolonged labour, difficulty with catheterization, higher caesarean birth rates, increased rates of postpartum hemorrhage, episiotomy and genital lacerations, resuscitation of the infant, stillbirth, early neonatal death and low birth-weight.<sup>65-67</sup> The complications are attributed to the FGM/C, but some, such as the higher caesarean birth rate, may also be attributed to caregiver bias. These risks are higher in women with more extensive forms of FGM/C.<sup>65</sup>

Complications that require the most significant management are associated with infibulation, the most extensive form of FGM/C, when the entire labia majora, minora and clitoris are cut and removed and the remaining vulva is sewn up to leave a small opening. Lesser types of FGM/C have minimal to no complications.<sup>67</sup> The vaginal opening may have enlarged as a result of sexual activity and intercourse, possibly decreasing intrapartum complications, such as obstructed labour and associated fetal asphyxia, and any need for intervention. If the vaginal opening has not been expanded this can be rectified during pregnancy by deinfibulation or during birth with an episiotomy.

**“ Women need to be cared for with respect, dignity and privacy. They need information about the implications of FGM/C on their labour and birth.**

While some research supports prenatal deinfibulation, the SOGC indicates that most women may prefer not to have this procedure unless absolutely necessary and delay until labour.<sup>66-68</sup> Deinfibulation can be carried out during labour with adequate anesthesia and analgesia.<sup>66</sup> In some cases HCPs may offer caesarean birth, possibly because of discomfort with intrapartum management of FGM/C. Infibulation is not an adequate indication for caesarean birth, and deinfibulation is far less dangerous than caesarean birth.<sup>67</sup> According to the SOGC guideline, after delivery, vaginal, perineal, and vulvar trauma should be repaired in the usual way to restore normal anatomy.<sup>68</sup> While repair of torn or cut vaginal and vulvar tissue is appropriate, infibulating again is illegal in Canada and can result in criminal charges.

As always, women need to be cared for with respect, dignity and privacy. They need information about the implications of FGM/C on their labour and birth. Accepting and respectful attitudes are particularly important.<sup>69</sup> Care needs to be woman-centred—respecting the woman’s wishes and views as well as explaining why some requests may not be possible due to legal reasons. Women from cultures outside of Canada may find our health care system intimidating—and they may be frightened. HCPs must be careful not to stigmatize women who have undergone FGM/C.<sup>68</sup> It is important that HCPs likely to encounter women who have FGM/C familiarize themselves with the various types of FGM/C and their management.<sup>68</sup> Refer to the SOGC *Clinical Practice Guidelines on Female Genital Cutting* and WHO *Guidelines on the Management of Health Complications from Female Genital Mutilation*.<sup>68,70</sup>

### 6.13 LGTBQ POPULATIONS

As with all families, LGTBQ people require individualized care based on current evidence and their unique needs, experiences and preferences. Research is limited on the experiences and needs of LGTBQ families during labour and birth, although studies have identified negative experiences due to their sexuality. They may have additional needs, for example, the birth may involve a surrogate mother or the presence of the sperm donor. Ongoing education for HCPs on the unique needs of LGTBQ families has been identified as a method to improve their experiences of labour and birth.<sup>71</sup>



## 6.14 HISTORY OF PREVIOUS PERINATAL LOSS

Women who are pregnant after a previous loss may have high levels of fear and anxiety about their current pregnancy and birth. The cause of the previous loss may impact the current pregnancy and the baby's health. The woman and her family may doubt their ability to successfully have and parent a baby.<sup>72</sup> Supportive care during labour and birth for women and families who have had a previous loss is critical. Women and families may have many questions throughout labour and birth that need to be answered by all of their HCPs as thoroughly and as often as they are asked. Their anxieties may result in increased triage visits. Acknowledging these fears and reassuring women about the health of their infants is critical.

Those who care for women who have experienced a loss during labour and birth will need to be able to spend enough time with them to support and reassure them. Those who provide continuous support need to be aware of the normalcy of the high levels of anxiety until the time when these women are able to hold and care for their infant. Offering a consultation with social workers or spiritual guidance counsellors may be beneficial for the woman and her family. As discussed in Chapter 1, perinatal health psychologists would be ideal in such circumstances.

## 6.15 PRETERM BIRTH

In Canada, approximately 8% of infants are born prematurely, before 37 weeks gestation. Almost 90% of preterm babies are born between 32 and 36 weeks of gestation and 10% at less than 32 weeks.<sup>73</sup> Many women go into preterm labour spontaneously without identified risk factors or obvious cause. Multiple gestation, maternal medical and obstetric factors, behavioural and socioeconomic factors, previous preterm birth and medically indicated induction of labour or caesarean birth increase the likelihood of preterm birth.

If a woman presents in possible preterm labour, the goals of her care include timely diagnosis to confirm gestational age, evaluate fetal wellbeing, establish management plans and initiate therapies that improve outcomes for the mother and infant. The prospective parents also need to be provided with information and guided and supported. The diagnosis of preterm labour usually depends on regular uterine contractions associated with progressive changes in the cervix. Fetal fibronectin may be a negative predictor of preterm labour for women between 22 and 34 weeks of pregnancy.<sup>74</sup> Accurately ruling out preterm labour may avoid hospital admission or transfer to another centre, allowing women to remain in their own community.

Evidence suggests that prenatal corticosteroids decrease both mortality and morbidity of preterm infants between 24 and 34 weeks gestation.<sup>75</sup> More recent studies also show that outcomes are also improved in preterm infants born before 24 weeks, and also for the late preterm (34<sup>+0</sup> to 37<sup>+6</sup> weeks).<sup>76,77</sup> Magnesium sulfate may decrease the risk of cerebral palsy; it is recommended by the SOGC for women who are less than 31<sup>+6</sup> weeks gestation with imminent preterm birth or for whom preterm birth is planned.<sup>78</sup> For women with uncomplicated preterm labour and intact membranes, broad-spectrum antibiotics do not improve neonatal outcome.<sup>79</sup> The SOGC guidelines *Antibiotic Therapy in Preterm Premature Rupture of Membranes* and *The Prevention of Early-Onset Neonatal Group B Streptococcal Disease* offer recommendations on antibiotic therapy for women <37 weeks gestation in labour or with ruptured membranes.<sup>47,80</sup>

Tocolytics are agents that suppress uterine contractions and delay preterm birth. Overall, there is conflicting evidence that their use improves outcomes.<sup>81-83</sup> Short-term use of tocolytics may be helpful in delaying birth when a woman needs to be transferred or while corticosteroid therapy is administered.<sup>84</sup>

The outcomes of preterm infants are improved if they are born in centres that are able to provide the appropriate level of specialized care.<sup>85</sup> In regionalized systems of perinatal care, mothers in preterm labour are often transferred to facilities that offer a higher level of perinatal care. Although this may mean separation from familiar surroundings and extended family, antepartum transfer avoids separation of mother and baby in the immediate postpartum period and helps parents become familiar with the health care team and the environment where their baby will initially receive care.

The anticipated birth of a preterm infant is cause for worry and anxiety for parents. Providing family-centred care is critical. Many families have not contemplated a preterm birth and may be unfamiliar with the challenges and outcomes of premature infants. Meeting with perinatal HCPs prior to labour and birth helps parents understand what to expect. It also allows the health care team to understand the parent's circumstances, expectations, family situation, educational background, support systems, needs and anxieties. A prenatal consultation by the pediatric/neonatal team can reduce anxiety, particularly later in the pregnancy, when parents may believe their infant's prognosis to be worse than it is.<sup>86</sup> A prenatal consultation also provides some continuity into the postpartum period and helps establish a therapeutic relationship. In more remote areas, a telephone consultation can be useful while awaiting transfer. The information needs of parents vary, particularly when the mother is in active labour. HCPs must balance the need to provide comprehensive information with the mother's health, her and her families' need for information, the ability of the parents to process the information provided and the time available. Information that is important to parents includes their infant's chance of survival, likely medical problems, what will happen at birth, the risk of disability, the care their baby will require, breastfeeding, how to parent a baby in a special care nursery and coping with stress.<sup>87,88</sup> Providing written information may be helpful.

The anticipated birth of an extremely preterm infant (22<sup>o</sup> to 25<sup>o</sup> weeks of gestation) is particularly distressing as parents and HCPs start discussing complex and ethically challenging issues about the infant's care plan. Challenges include how to determine prognosis and how to frame discussions about disability and death.<sup>89</sup> Particular goals of counselling include understanding the parents' experiences and values, providing accurate, consistent and balanced information, and engaging and supporting parents in shared decision-making, all while showing compassion and providing hope.<sup>88-90</sup> Many parents make decisions about their child's care based on their religion, spirituality, culture and hope rather than specific medical information.<sup>90,91</sup> It is recommended that the health care team tailor its approach to counselling for each individual family and infant. It is also helpful for parents to meet with their HCPs on more than one occasion. In addition, information provided by all team members, both obstetrical and pediatric, must be consistent. It is important that those involved in the care of both mother and infant are aware of, understand, respect and support any decisions that have been made. Counselling needs to be ongoing; decisions are not irrevocable and may change, especially if new information is available or the pregnancy advances. The SOGC guideline *Obstetric Management at Borderline Viability* offers recommendations relating to obstetric and neonatal care at extremely preterm gestations.<sup>92</sup>

“ HCPs must balance the need to provide comprehensive information with the mother's health, her and her families' need for information, the ability of the parents to process the information provided and the time available.

## 6.16 STILLBIRTH

Supporting families through loss and grief is an integral part of FCMNC. Maternal and newborn units therefore need to incorporate a system of caring for loss at any time along the maternity continuum. In Canada, stillbirth is defined in all provinces except Quebec as fetal deaths with a birth weight of at least 500 g or a gestational age at delivery of at least 20 weeks and no signs of life (i.e. no heartbeat or breathing). In Quebec, the definition is a weight greater than 500 g irrespective of gestational age.<sup>93</sup> National stillbirth rates were last reported to be 8/1000 total births in 2014, which had increased from prior reporting.<sup>94</sup> Stillbirth statistics also include pregnancies that ended in termination after 20 weeks gestation. These pregnancies generally include fetuses with known genetic or congenital anomalies. In some provinces spontaneous stillbirth rates appear to have remained stable while stillbirths related to terminations have increased.<sup>95</sup>

Stillbirth represents a tremendous challenge for parents, families and HCPs. Almost half of fetal losses occur in presumed uncomplicated pregnancies that catch parents and medical personnel unaware. The majority of stillbirths occur before the onset of labour. Regardless of the cause, studies indicate parents suffer emotional distress including depression, post-traumatic stress disorder and anxiety. These effects can persist into subsequent pregnancies.

If there are no significant maternal medical issues, decisions regarding the birth can be determined by the family. Some women request immediate admission to hospital for induction while others may prefer a delay in admission. The literature on the psychological benefits of delaying birth is conflicted. Waiting for spontaneous labour to begin is an option and may avoid issues associated with induction. Spontaneous labour usually begins within 1 to 2 weeks of fetal death in most cases of stillbirth. Rarely, risks can include coagulation complications if the fetus remains in utero for weeks.

Vaginal birth is preferable with a stillbirth because it is generally safer for the mother than caesarean birth, even in the case of a prior lower-segment caesarean birth. Some mothers may wish to have a caesarean birth so they can avoid the labour and vaginal birth. They need to be advised about the benefits and risks of various modes of birth and supported in their choices. One consideration that may be a factor is that in early pregnancy (less than 28 to 30 weeks) the lower segment may not have formed, so a caesarean birth would not be a lower segment caesarean birth, which is a criterion for the option of a vaginal birth with a subsequent pregnancy.

The woman's emotions and responses to pain may change throughout the labour and birth. It is important to provide close continuous support and to be prepared for changing emotions throughout the process, particularly during the second stage. Parents have described what they wanted from their caregivers when they experienced a stillbirth: support in meeting with and separating from the baby, support in chaos, support in bereavement, explanation of the stillbirth, organization of their care, and understanding the nature of their grief.<sup>96</sup> Both medical and psychological care need to be individualized to the mother and family's needs.

Families can be offered a chance to hold and see the baby and may appreciate keepsakes. It is important to avoid prejudging the parents and making presumptions about their choices; offering them the opportunity to change their decisions during the birth and relinquishment is also important. Parents need to be supported when separating from the baby.

The fetus and placenta should be examined after birth and the findings described to the family, with the baby called by his or her name when possible. If there is a clear finding, such as a tight knot in the umbilical cord, this needs to be discussed. It is important to counsel parents to wait until all studies are completed before trying to establish the cause of death.

An autopsy can be invaluable in determining the cause of a stillbirth. A study of 1477 stillbirths reported that autopsy findings identified the cause of death in 46% of cases and yielded new information in 51%.<sup>97</sup> This new information changed the estimated recurrence risk in 40% of cases and changed recommendations for preconception care in 9%, prenatal diagnostic procedures in 21%, prenatal management in 7% and neonatal management in 3%.<sup>97</sup> Encouraging parents to permit an autopsy needs to be done in a manner that addresses their concerns. If a complete autopsy is declined, the parents may consider a partial or non-invasive autopsy that can still provide useful information. Concerns should be reviewed with patience, sensitivity, accurate information and respect for the parent's choice.

Parents who have a multiple gestation with both healthy and stillborn infants require different types of support. They may have conflicted emotions with respect to their pregnancy and birth and their attachment to their newborn(s).

It is also important to recognize the toll that stillbirth may have on HCPs. A *debriefing* that includes a grief counsellor or professional facilitator may be useful. Providers also need to be made aware of appropriate resources for their emotional and psychological wellbeing.

## 6.17 CONGENITAL ANOMALIES

In 2014, the prevalence of congenital anomalies in Canada (excluding Quebec) was approximately 430 in every 10,000 total births (including live and stillbirths).<sup>73</sup> When an anomaly is found prenatally, the aim is to achieve the best outcome for the newborn with minimal morbidity for the mother.<sup>98</sup> This requires an interprofessional approach that involves the primary care provider, social workers and a variety of subspecialty medical and surgical services. While gathering information and planning care, it is important to treat each family as unique and respect their views.

The first step is to identify and confirm the congenital anomaly and the next is to tell the woman and family. An interprofessional approach that may involve consultation with pediatrics, neonatology, genetics, pediatric surgery, pediatric cardiology, social work and/or the tertiary care centre, etc., as appropriate, provides the family with more detailed information. Based on the outcomes of these consultations, there will be further discussion about the specific care plan, the timing and place of birth, what is expected to happen during labour and birth, whether vaginal or caesarean birth is preferable, outcome and care options, and resuscitation of the infant or palliative care.

During these discussions it is important to emphasize to the woman and her family that the functional and neurodevelopmental outcomes for their child cannot always be predicted based on a prenatal diagnosis or newborn assessment.<sup>98</sup> Some anomalies are isolated whereas others may be part of a syndrome. Screening technologies combined with ultrasound assessment have improved detection rates for some conditions. Rates for trisomy 21 detection vary from around 16% when looking for structural anomalies using only ultrasound to more than 99% with non-invasive prenatal testing that includes blood tests with ultrasound assessment.<sup>99,100</sup> Chromosome microarray analysis holds the promise of detecting an even greater range of genetic anomalies than does traditional karyotyping.

Sometimes, HCPs and families may have weeks to months to prepare for the birth. At other times, anomalies may not become apparent or may have gone undetected until near the end of the pregnancy or even during birth. It is important to recognize that certain congenital anomalies increase the risk for preterm birth either spontaneously or as a result of obstetrical intervention for the health of the baby.<sup>98</sup>



Where there is a known or suspected congenital anomaly (either structural or genetic), the care during labour and birth may vary. Establishing decisions to do with timing, mode and location of birth in advance is critical. The wishes of the parents need to be respected and, ideally, a birth plan developed that involves the best interests of the woman, her family and newborn with consultation from the care team. Decisions around caesarean birth are usually based on obstetrical indications (in the same way they are for a baby without anomalies), but they may also depend on the specific anomalies present.

The woman and her family may opt to continue the pregnancy until the onset of spontaneous labour, be induced or to terminate the pregnancy. A clinical case conference involving the primary caregivers, nurses, consultants and social workers is valuable to plan birth and neonatal care. A discussion undertaken with a tertiary care centre would also consider whether birth close to home is appropriate. In addition, when the family is admitted to the hospital it is recommended that they meet with their care team and have their plan of care reviewed and updated as new information becomes available.

When the baby has anomalies that might include immediate or long-term morbidity, care for the infant is provided on an individual basis in conjunction with family wishes. As much as possible, routine maternal and newborn practices, such as skin-to-skin contact and breastfeeding, should be maintained. There may be specific birth and neonatal care plans for babies with certain categories of anomalies such as congenital heart defects, neural tube defects and others.<sup>98</sup>

If a newborn is to receive palliative care, the early involvement of perinatal palliative care providers means they can meet with the family when they arrive at the birthing unit. The emphasis is on providing a well-supported birth for the mother and family. A vaginal birth is preferable and poses less present and future morbidity for the mother than caesarean birth. Electronic fetal monitoring is best avoided as it can be distressing. Following birth the parents need as much time as they wish to view and hold the baby. Mementos, keepsakes and photos are also valuable and helpful to families.

Evaluation of the placenta for all anomalies is recommended, as is an autopsy in the case of lethal anomalies. Talking about an autopsy with the mother and family ideally occurs prior to labour and birth. Debriefing for the care team is particularly important in situations of congenital anomalies.

## 6.18 TERMINATIONS OVER 21 WEEKS

Pregnancy terminations in Canada decrease with increasing gestational age. Approximately 2.5% of all pregnancy terminations occur after 21 weeks.<sup>101</sup> Terminations at advanced gestational age usually occur because a fetus has severe fetal congenital abnormalities or aneuploidy. In many instances, congenital abnormalities may not be diagnosed until routine anatomical ultrasound at 18 to 19 weeks gestation or with the results of amniocentesis at 16 weeks.

A woman who has a termination of her pregnancy must be cared for according to the principles of family-centred care. Care needs to be provided based on her unique needs, with respect and compassion and without judgment, and she needs to be fully informed so that she can participate in her care and provide consent.

The decision to terminate a pregnancy is a complex one for many families. In many instances, families may have discussed choices with their primary care provider and subspecialists. Some mothers who choose later pregnancy termination may have to travel to specialized centres for care.<sup>102</sup> In some instances, continuation of the pregnancy

may pose unacceptable health risks to the mother (e.g., severe preeclampsia, cancer, severe cardiac disease). There is no legal limit on the gestational age when pregnancy termination may occur in Canada.<sup>102,103</sup> Decisions around a gestational age limit are usually provider and facility driven. Hospitals may benefit from discussions with members of the health care team as well as an ethics committee about termination after 24 weeks of gestation.

Pregnancy termination after 20 weeks can involve a surgical procedure (dilation and evacuation) or induction of labour. The obstetrician may still the fetal heart in utero prior to medical induction or dilation and evacuation. Often the forces of labour and gestational age result in stillbirth; in some rare instances the neonate will die after birth.

Women should be offered labour analgesia. This may be in the form of parental opioids, nitrous oxide or epidural anesthesia. It is important to recognize that the risk of retained placenta is often higher with pregnancy termination at an advanced gestational age.

Pregnancy termination can be challenging for women and their families and for HCPs. It is important that women are:

- Allowed more privacy, if they need it;
- Given the option for early discharge or to remain in hospital until they are comfortable leaving;
- Asked ahead of time if they would wish to remain with the neonate;
- Offered an autopsy in the case of fetal aneuploidy and or congenital abnormalities (ideally, this is discussed ahead of time);
- Offered advice about cessation of lactation and breast milk donation;
- Encouraged to meet and talk with their postpartum HCP to debrief or for counselling;
- Referred to community resources and grief counselling as appropriate.



## 7 CARE DURING LABOUR

### 7.1 DIAGNOSIS/ASSESSMENT OF EARLY LABOUR AND ACTIVE LABOUR

The approach to assessment and care in early labour can affect outcomes. Where the birth is to take place—home, birthing centre or hospital—will affect when and where the woman is assessed in early labour and where she will labour.

For birthing centres and hospitals, it is recommended that women with healthy pregnancies who are not in active labour not be admitted to the labour and birthing unit as doing so increases the risk of initiating unnecessary interventions. Indeed, these women are better supported at home or in a less intensive environment where comfort measures and nutrition are readily accessible.

Women who arrive at the labour unit early in labour usually do so because of a perceived need for support and care. Skilled staff should determine language preference, do an admission assessment and triage in an early assessment/triage room.

It is important that hospitals and birthing centres have clearly defined strategies for assessing women and their unborn babies and diagnosing labour as well as criteria for admission, type and timing of medical procedures in early labour and support at this time. For home births, it is also important to have protocols that outline assessments, diagnosis of labour, clinical procedures and support for the woman and her family.

Active labour is traditionally diagnosed when the cervix is 3 to 4 cm dilated in a nulliparous woman or 4 to 5 cm dilated in a parous woman.<sup>104,105</sup> More recent studies show that dilation rates are variable and increase significantly after 6 cm in both nulliparous and parous women.<sup>106</sup> This suggests an individualized approach to diagnosis of active labour may be most appropriate.

If the woman is in the latent phase of labour, she needs to be informed about the status of her labour and reassured. She may either be discharged home (if this is appropriate for her and her family) or asked to remain in the triage area or a lounge. Ambulation, comfort measures, nutrition and hydration are particularly important at this time. Even at the early stages of cervical dilation, labour pain and anxiety may be intense and some women may require additional support and care including medications for pain and sedation. The SOGC guideline *Management of Spontaneous Labour at Term in Healthy Women* recommends delaying admitting women with a term pregnancy to the birthing unit until they are in active labour.<sup>45</sup>

## 7.2 INITIAL ASSESSMENT

Women are often anxious and frightened when they begin labour. The care women receive at this time may have a profound and lasting effect.<sup>107</sup> Being aware of the emotions that many women and their companions feel and considering each labouring woman individually will help HCPs understand the sources of women's fears and anxieties.

In general, a nurse is the first HCP to meet the woman in a hospital setting. At admission, the nurse has an excellent opportunity to initiate a therapeutic relationship with the woman and her companions. Admission is the time to review the woman's birth plan, whether written or verbal, with her and her partner/family and to discuss their worries, concerns and preferences. It is also the time to inform the woman about the nature and reasons for examinations and procedures. Orienting her to the setting and staff organization is especially important if she has not had a prenatal tour in person or virtually.

When a woman is admitted to a hospital birthing unit or birthing centre, an initial history and assessment is conducted. This assessment includes the woman and unborn baby's health status, their physical and emotional wellbeing, the progress of labour and their individual needs. The history and assessment can be conducted in a minimally disruptive manner while recognizing the importance of timely assessment. Sources of information for the history include the woman, the prenatal record, laboratory results, a previous hospital chart or electronic record and the woman's companion (if appropriate). A copy of prenatal records should be available at the place of birth in mid pregnancy and again at approximately 36 weeks of pregnancy.

Occasionally, a woman may present with little or no prenatal care. If that is the case, it is important to try to determine gestational age and any maternal health issues. Urgent antenatal tests should be obtained (e.g. blood type, serologies, etc.).

For midwife-assisted home births and birthing centres, the initial contact is often by phone. The midwife will then assess the woman's labour over the phone or in person, depending on the circumstances.

### 7.3 TRIAGE

In the last decade many Canadian hospitals have implemented obstetrical triage, either within the birthing unit or outside. Obstetrical triage may be associated with an early labour lounge or where scheduled appointments for procedures or tests take place, for example, where RH immune globulin or prenatal corticosteroids are administered or non-stress testing conducted.

A consistent approach is necessary to determine the reason the woman came to the hospital and to answer specific questions to do with gestational age, bleeding, contractions, rupture of membranes, presence of fetal movements and parity. This initial history can be combined with vital signs assessment to ensure that women with high acuity are seen first.<sup>108</sup> This also meets the standards set out by Accreditation Canada and the Association of Women's Health, Obstetric and Neonatal Nurses, which describe the importance of identifying if a woman needs to be seen and assessed within 5 to 10 minutes of arrival to ensure safe care.<sup>109</sup>

Using a tool to determine the acuity of the patient has proven helpful in Canadian emergency rooms. It has also decreased the number of medical/legal cases associated with care within triage areas.<sup>110</sup> Similar tools, such as the Obstetrical Triage Acuity Scale (OTAS), have been developed for use in obstetrical triage units to efficiently and consistently determine the acuity of the woman's health needs and assist HCPs with deciding appropriate care.<sup>111</sup> Women seen in triage have identified the need for compassionate HCPs and for information that helps them understand any concerns and need for treatment.<sup>112</sup>

### 7.4 MEDICALLY UNNECESSARY PROCEDURES

In some Canadian centres, certain procedures that benefit neither the woman, her baby nor her companions still occur. The *CHMPPS* and the *MES* provide information about current policy and practice relating to these interventions.<sup>3,11</sup> For example, 96% of hospitals had a policy stipulating no perineal shaves on admission—up from 63% in 1993. Nevertheless, 19% of women who had or attempted a vaginal birth reported that they had a pubic or perineal shave; it was not clear whether these were provider or self-administered. Similarly, 88% of hospitals had a policy stipulating that no women should receive an enema or suppository—up from 37% in 1993. Despite this, 5% of women who had or who attempted a vaginal birth had an enema.<sup>3</sup>

Based on available evidence, it is recommended that the following routine procedures be abandoned unless medically indicated or the woman prefers them:

- Changing into a hospital gown;
- Enemas and shaves;
- Confinement to bed;
- Lithotomy position in second stage;
- Episiotomy;
- Support person not allowed during epidural placement.

Similarly, the following routine procedures can be abandoned unless medically indicated:

- Administering intravenous fluids;
- Continuous electronic fetal heart rate monitoring rather than intermittent auscultation;
- Restricting food and fluids;
- Routine artificial rupture of membranes;
- Induction of labour;
- Caesarean birth.

## 7.5 FETAL HEALTH SURVEILLANCE

Fetal health surveillance is an important component of care during labour and birth. Frequent, regular assessment of contractions and fetal heart rate is the standard in Canadian health care settings. Labour contractions interrupt uteroplacental blood flow, which in turn decreases oxygen delivery to the fetus. This temporary interruption is generally well tolerated by the fetus. The purpose of intrapartum fetal health surveillance is to assess this tolerance and the fetal response to labour. HCPs can be reassured of fetal wellbeing, in turn reassuring the mother and family, and intervene appropriately if necessary to achieve the best possible outcome.

These guidelines review general principles and recommendations regarding fetal health surveillance. More detailed clinical practice guidelines, including classifications of the fetal heart rate and electronic monitoring tracings and the methods and rationale for intervention, are available from the SOGC, the Canadian Perinatal Programs Coalition and Perinatal Services BC.

Two types of fetal monitoring are used in labour<sup>113</sup>:

- Intermittent auscultation, which involves clinically assessing the contraction pattern then listening to the fetal heart at different intervals for short periods of time;
- Continuous fetal heart rate monitoring, which involves attaching devices that monitor the contraction pattern and the fetal heart rate throughout labour and birth.

Assessing for the presence or absence of risk factors must be done to choose the appropriate method of intrapartum fetal health surveillance.<sup>114,115</sup> In addition, fetal surveillance methods should be discussed with a woman during pregnancy and as labour progresses.<sup>12,116</sup> Institutional practices should be evidence based and ideally agreed upon and practiced by all HCPs.

Clear policies to support the use of intermittent auscultation as well as clear indications for when to use continuous fetal heart rate monitoring is recommended in all birth settings. When continuous fetal monitoring is indicated, telemetry allows women to ambulate and adopt a variety of positions during labour and birth, as supported by best evidence.

It is essential for HCPs who care for women during labour and birth to have regular interprofessional education in fetal health surveillance. This education must include knowledge of evidence and guidelines and promote consistent use of current terminology and classification. Knowing how to palpate and assess uterine contractions and resting tone and assess and interpret the fetal heart rate—and intervene appropriately as necessary—are essential skills.<sup>12,114,117</sup>

### Intermittent Auscultation

For women with low-risk pregnancies, intermittent auscultation is the preferred method of fetal surveillance.<sup>12,114,117,118</sup> Evidence shows that continuous electronic fetal monitoring results in increased rates of intervention such as caesarean birth, epidural use and instrumental birth with no positive effect on long-term morbidity and mortality for the baby.

In addition to being the preferred method for low-risk pregnancy, intermittent auscultation may confer other benefits. Being low-tech and less expensive, it can be used effectively in a variety of settings both in and out of hospital. It requires caregivers to stay close by, which may also be conducive to providing the one-to-one care and continuous labour support recommended for all labouring women regardless of risk.<sup>10,12</sup> In turn, this level of care and potentially improved labour support may lead to increased satisfaction among labouring women. Finally, intermittent auscultation is less constricting than continuous electronic fetal monitoring, allowing increased movement. It is even possible to assess the fetal heart rate when the woman is immersed in water.<sup>117</sup> Seeing as intermittent auscultation is versatile, it may serve to *normalize* low-risk births.<sup>114</sup>

“ Clear policies to support the use of intermittent auscultation as well as clear indications for when to use continuous fetal heart rate monitoring is recommended in all birth settings.

Refer to the SOGC’s *Fetal Health Surveillance: Intrapartum Consensus Guideline*, Canadian Perinatal Programs Coalition and Perinatal Services BC manuals/training, and other current clinical guidelines for guidance on intermittent auscultation.<sup>12,117,119</sup>

### Continuous electronic fetal heart rate monitoring

Despite evidence-based guidelines recommending only intermittent auscultation for low-risk births, the trend in both Canada and the United States over the last 2 decades has been towards increasing the routine use of CEFM.<sup>3,113,114,117</sup> The reasons for this continued and widespread use of CEFM are complex and likely related to such factors as: the HCP level of comfort and familiarity with the procedure; staffing issues in hospitals; women’s incomplete informed choice; increased use of epidural anesthesia; a belief that a continuous record of the fetal heart rate may decrease litigation; and the ubiquitous availability of technology in the labour and birthing unit.<sup>113,114,120</sup> As a result, numerous guidelines have stressed the importance of choosing appropriate intrapartum surveillance methods based on risk.<sup>117</sup>

If a woman’s pregnancy or labour is low risk, there is no reason for an initial period of continuous fetal monitoring (often referred to as an *admission strip*). In fact, this practice may result in increased general use of CEFM throughout labour and use of epidural anesthesia.<sup>12,117</sup>

CEFM limits the woman’s mobility and comfort measures such as having a bath or shower. Research has also demonstrated that when CEFM is used, care often becomes focused on the machine itself rather than the experiences of the labouring woman.<sup>114,121,122</sup> In addition, its routine use may decrease caregiver confidence in monitoring the fetal heart rate through other means and lead to the false reassurance of the hard *evidence* of a heart rate tracing.<sup>114,117,122,123</sup>

When CEFM is used, guidelines emphasize the need for continuous one-to-one labour support. The woman is also encouraged to be as mobile as possible for her comfort by using telemetry.<sup>12</sup> Intrauterine pressure catheters (IUPC) for internal monitoring may be helpful when uterine contractions are difficult to palpate, when caput and molding are absent despite apparently *good* contractions or in women who are obese.<sup>119</sup> Refer to current clinical guidelines such as the SOGC’s *Fetal Health Surveillance: Intrapartum Consensus Guideline* and the Canadian Perinatal Programs Coalition’s *Fundamentals of Fetal Health Surveillance: A Self-learning Manual* for guidance on CEFM.<sup>117,119</sup>

## 7.6 LABOUR MANAGEMENT

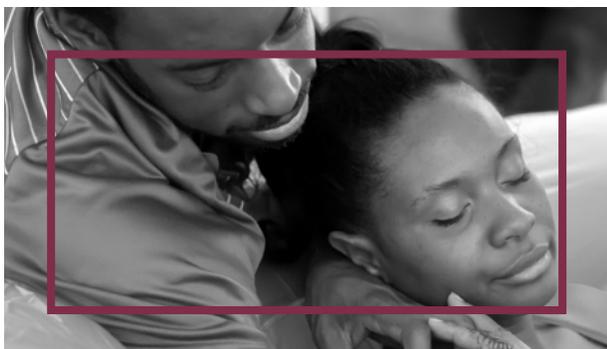
*Management* of labour is frequently promoted as a means to prevent morbidity associated with dystocia and to promote vaginal birth. Dystocia is defined as slow or absent progress, generally quantified as cervical dilation less than 0.5 cm/hour over 4 hours or no dilation over 2 hours in active labour, or no fetal descent after active pushing for 1 hour in second stage of labour.<sup>45</sup> It is associated with an increased risk of infection, maternal stress and postpartum hemorrhage and is the most common indication for primary caesarean birth. The SOGC recommends that dystocia not be diagnosed prior to active labour or before 4 cm dilation.<sup>45</sup>

Dystocia may result from a problem with 1 or more of 4 critical elements of labour and birth, collectively known as the 4 Ps:

- *Powers* refers to the quality of contractions including frequency, strength and duration.
- *Passenger* denotes the fetus with respect to position, attitude, size and anatomy.
- *Passage* refers to maternal pelvic structure and soft tissue.
- *Psyche* relates to the woman's pain, anxiety and ability to cope.

Because true cephalopelvic disproportion (CPD) is rare, in many cases problems that may lead to dystocia can be avoided or corrected. Care during labour requires an understanding of the physiology of labour and birth as well as the knowledge and skills necessary to support the process and the labouring woman.

The latent phase of the first stage of labour refers to the period when labour begins, with often irregular and mild contractions leading to at least partial effacement of the cervix and dilation reaching 3 to 4 cm in a nulliparous woman and 4 to 5 cm in a parous woman. Although the time of onset is difficult to determine with certainty, this phase can last several hours. Recent studies suggest that progress from 4 to 5 cm can take up to 6 hours and from 5 to 6 cm up to 3 hours. This is far longer than previously thought.<sup>106</sup> Allowing labour to progress more slowly to 6 cm may reduce the rates of intrapartum caesarean birth and subsequent caesarean birth.<sup>106</sup>



Active labour is traditionally diagnosed when the cervix of a nulliparous woman is dilated to 3 to 4 cm and that of a parous woman is dilated to 4 to 5 cm.<sup>104,105</sup> Recent research shows that dilation rates vary and include a significant increase in dilation rates after 6 cm in both nulliparous and parous women.<sup>106</sup> This suggests an individualized approach to diagnosing active labour may be most appropriate, with up to 20 hours and 13.6 hours considered the normal range for total duration of labour in nulliparous and parous woman, respectively.<sup>104,105</sup> The SOGC guideline *Management of Spontaneous Labour at Term in Healthy Women* suggests that among “low-risk nulliparous women in the active phase of labour (i.e., equal to or greater than 4 cm dilation), progress of cervical dilation greater than or equal to 0.5 cm/hour is considered normal.”<sup>45, p.843</sup>

Vaginal examinations are carried out to assess labour progress. Because these examinations are to a degree subjective, they need to be completed consistently, preferably by the same examiner, to determine changes reliably. The assessments include dilation, effacement and position of the cervix as well as fetal station and position, and the presence and degree of molding or caput. In most facilities, results are commonly plotted on a partogram graph for a visual display of labour progress. However, the usefulness of partograms to monitor labour progress is debatable and needs to be further researched.<sup>124</sup> A recent Cochrane review concluded that there is no evidence to support a recommendation on the frequency of vaginal examinations, and no Canadian guidelines suggest vaginal exam frequency.<sup>125</sup> Because of this inconsistent evidence and because these examinations are invasive and generally uncomfortable for women, those providing care for labouring women must be sensitive to overt and subtle signs of progress. The SOGC guideline *Management of Spontaneous Labour at Term in Healthy Women* provides further guidance.<sup>45</sup>

Adequate contractions should result in cervical dilation and improve fetal attitude and position. Their frequency, strength and duration can be monitored by careful abdominal palpation. If available, an intrauterine pressure catheter can be used if contractions are difficult or impossible to assess by palpation.

Epidural anesthesia/analgesia provides effective pain-relief, however, epidurals may slow contractions and labour progress, increasing the need for augmentation of labour.<sup>126</sup> To augment labour, amniotomy may be used alone or with oxytocin when contractions are inadequate. The SOGC guideline *Management of Spontaneous Labour at Term in Healthy Women* presents indications for amniotomy.<sup>45</sup> Whether a high or a low dose protocol is more beneficial is debatable as the initial doses, dosage increments and intervals differ. It is recommended that each unit have a protocol for labour augmentation with oxytocin that is utilized by all members of the team.

The SOGC guideline *Management of Spontaneous Labour at Term in Healthy Women* has further recommendations on the management of the first stage of labour.<sup>45</sup>

## 7.7 NUTRITION AND HYDRATION

Restriction of food and fluids in labour is a practice that dates back to the 1940s. It was based on concerns that women would aspirate if they received a general anesthetic. However, research in the UK found that the incidence of pulmonary aspiration of gastric content has declined considerably in the past 20 years despite an increasingly liberal attitude to eating during labour.<sup>127</sup> Labour is a physically demanding event during which energy needs increase. Women who have long labours have higher levels of ketones in their urine.<sup>128</sup> The presence of ketonuria is a signal for metabolic imbalance and reduces the efficiency of uterine activity, which may lead to augmentation of labour with oxytocin.<sup>129</sup>

When given a choice, women demonstrate an ability to moderate their intake of food and drink to meet their needs, naturally slowing intake towards the end of labour.<sup>130,131</sup> The SOGC guideline *Management of Spontaneous Labour at Term in Healthy Women* states that “women who are at low risk of requiring general anesthesia should have the choice to eat or drink as desired or tolerated.”<sup>45, p.844</sup> If a woman receives an epidural, it is important to re-evaluate her risk with respect to ongoing oral intake.

Routine intravenous fluid therapy is a common practice in labour, but it decreases the woman’s ability to stay mobile and increases her risk of fluid overload. In addition, it does not meet her need for nutrition in labour, regardless of the type of solution used.<sup>128</sup> It may also affect breastfeeding due to edema in the breasts postpartum.<sup>132</sup> Only certain medically indicated situations require intravenous fluid therapy.

## 7.8 POSITION AND AMBULATION

### Labour

The literature and guidelines agree that women should be encouraged to move, walk and use comfortable positions during the first stage of labour. Being able to move “reduces the duration of labour, the risk of caesarean birth [and] the need for epidural, and does not seem to be associated with increased intervention or negative effects on mothers’ and babies’ well being”; it also gives women a sense of control.<sup>133, p.2</sup> Often HCPs promote recumbent positions in the first stage of labour, as having women in recumbent positions provides more convenient access for fetal monitoring, palpating the abdomen and vaginal examinations. In addition, when women are admitted to a hospital birth unit or birthing centre, the bed is often the focus in the room—women are shown to it and they may naturally lie down.

Movement, particularly in early labour, can facilitate the progress of labour and increase comfort. Giving women the liberty to select positions for labour and birth and encouraging them to try different positions involves few risks and has potential benefits.<sup>1,12,133-135</sup> The *Joint Policy Statement on Normal Childbirth* supports freedom of movement throughout labour and spontaneous pushing in the woman's preferred position.<sup>1</sup>

HCPs need to explain the risks and benefits of the positions women use in labour so they can make informed decisions. It is recommended that labour and birth environments be designed so that women feel that they have the space to move freely. HCPs also need to develop the skills to comfortably assist women to be mobile during labour. Ideally, all equipment is designed to help women stay mobile. For example when CEFM is clinically indicated, guidelines emphasize the need to encourage the woman to be as mobile as possible, using wireless telemetry, for example.<sup>12</sup>

Epidural anesthesia is commonly used by Canadian women to relieve pain—even though it can result in prolonged labour and increase the need for forceps and vacuum birth.<sup>126</sup> Epidural rates in Canada are rising, from 53.2% in 2006/2007 to 57.8% in 2015/2016.<sup>136</sup> However, low-dose epidural techniques, or *walking* epidurals, mean that women can be upright and mobile during labour.<sup>137</sup> Some experts have suggested that the increased number of vaginal births among women who have had low-dose epidural is due to this ability to be upright during labour.<sup>137</sup> Although a recent Cochrane review found no clear effect of any upright position compared with a recumbent position among women in labour with epidural anesthesia, the trials were small and the authors conclude that they “cannot rule out any small important benefits or harms, so women should be encouraged to take up the position they prefer.”<sup>138, p.3</sup> As with women without an epidural, women with low-dose epidurals should be educated about the benefits/risks of different positions in labour and encouraged to try different positions depending on their clinical situation.

## Birth

In many cultures, women naturally give birth in upright positions—kneeling, squatting or standing. It is claimed that the medical care system in North America has influenced women to give birth on their backs, with their legs up in stirrups. As mentioned earlier, HCPs are likely the ones who promote recumbent positions for their convenience.

A recent Cochrane review found that women who did not have epidurals experienced more pain if they gave birth on their backs and were more likely to have a forceps-assisted birth and an episiotomy, although they lost less blood. They were also more likely to have abnormal fetal heart rate patterns. However, the studies reviewed were not of good quality and the authors concluded that women should be encouraged to give birth in the positions they find most comfortable—which are usually upright—and that more research needs to be done.<sup>139</sup>

According to the *CHMPPS*, the majority (71%) of Canadian hospitals have a policy that the position a woman adopts for birth is her own choice, but according to the *MES*, almost half (48%) of women who had a vaginal birth reported using a flat-lying position during birth and 36% reported having their legs in stirrups for birth.<sup>3,11,28</sup>

Ideally, hospitals and birthing centres have equipment that enables women to give birth in different positions. Providers need to develop the necessary skills and knowledge to comfortably assist women to give birth in different positions and encourage women to be upright as this is optimal for birth.



## 7.9 PAIN MANAGEMENT: NON-PHARMACOLOGICAL, PHARMACOLOGICAL AND EPIDURAL OPTIONS

Perception of pain is highly individual. When this is combined with the highly variable nature of labour, it means that managing the pain associated with labour and birth needs a flexible approach with multiple options so that a woman can choose what works for her. The degree of pain and each woman's ability to cope with it depends on a number of factors: the woman's experience; her psychological makeup; the degree of preparation for birth; her cultural beliefs and practices; the quality and strength of uterine contractions; the support she receives during labour and birth; and the position of the fetus.<sup>140</sup> It is important for all pregnant women to have a plan for managing pain during labour and birth using multiple strategies. Similarly, it is important that HCPs explain the risks and benefits of each method of pain management so that women can make informed choices.<sup>45</sup>

Because some women want pain relief while others prefer to avoid medication, every hospital birthing unit or birthing centre in Canada should be able to provide at least 1 option from the 3 general categories of labour pain management options—non-pharmacological, pharmacological and epidural techniques.

Non-pharmacological techniques include:

- Self-help (e.g., ambulation, breathing, massage, baths/showers);
- Complementary therapies (e.g., hypnosis, acupuncture, transcutaneous electrical nerve stimulation [TENS], reflexology and aromatherapy);
- Sterile water injections.

Pharmacological therapies include nitrous oxide and parenteral opioids for early and established labour. Epidural techniques include standard epidural and combined spinal epidural. Low-dose woman-controlled epidural analgesia, including newer, programmed intermittent bolus epidurals, reduces the overall need for epidural medication and increases mobility.<sup>45,141</sup>

The *MES* provides a snapshot of women's use of various modalities:<sup>3</sup>

- Among women who had or who attempted a vaginal birth, the medication-free pain management techniques most frequently used were breathing exercises (74%), changes in position (70%) and ambulation (52%).
- More than half (57%) of all women who had or who attempted a vaginal birth had an epidural or spinal anesthesia.
- Almost a quarter (23%) of women who had or who attempted a vaginal birth reported using only medication-free pain relief and 69% reported using both medication-based and medication-free techniques during labour.

### Efficacy of Pain Management Options

According to a recent Cochrane review that summarized the evidence from other Cochrane and non-Cochrane systematic reviews on the efficacy and safety of non-pharmacological and pharmacological interventions to manage pain in labour, while epidural, combined spinal epidural (CSE) and inhaled analgesia are effective in labour, they may result in adverse effects.<sup>142</sup> Women who had epidurals were more likely to have instrumental vaginal births and caesarean births for fetal distress than those who had placebo or opioids, although there was no overall increased risk of caesarean birth. Women who had epidurals were also more likely to have urinary retention, low blood pressure, fever or motor block.

The review also found that immersion in water, relaxation techniques, acupuncture, local anesthetic nerve blocks (pudendal and paracervical blocks) and non-opioids relieved pain and improved the women’s satisfaction with pain relief. Immersion in water, relaxation techniques and non-opioids improved the women’s birth experience compared with placebo or standard care. Women who used relaxation techniques had fewer assisted vaginal births while women who had acupuncture had fewer assisted vaginal births and caesarean births.

The review concluded that there is insufficient evidence to determine whether hypnosis, biofeedback, sterile water injection, aromatherapy, TENS or parenteral opioids are more effective than placebo or other interventions for pain management in labour.

Another recent meta-analysis of non-pharmacological approaches to pain management in labour found that women were less likely to have an epidural and reported greater satisfaction when they used water immersion, massage, ambulation and ability to change position (i.e., pain management approaches based on Gate Control) compared to women who used acupressure, acupuncture, electrical stimulation and water injections (i.e., pain management approaches based on Diffuse Noxious Inhibitory Control).<sup>143</sup> “When compared with non-pharmacologic approaches based on Central Nervous System Control (education, attention deviation, support), usual care is associated with increased odds of epidural, caesarean birth, instrumental delivery, use of oxytocin, labour duration, and a lesser satisfaction with childbirth. Tailored non-pharmacologic approaches, based on continuous support, were the most effective for reducing obstetric interventions.”<sup>143, p.122</sup> The authors concluded that non-pharmacological approaches to pain relief during labor “provide significant benefits to women and their infants without causing additional harm.”<sup>143, p.122</sup>

For detailed findings of these reviews and additional information on evidence to support the efficacy of pain management options, see [Appendix B](#). It is critical that nurses, physicians and midwives who care for women during labour and birth have the knowledge and skills to support the woman’s use of non-pharmacological and pharmacological pain management options.

## 7.10 MECONIUM

Meconium, the initial material passed from the fetal bowel, is sterile and consists of intestinal secretions, cells and fluid. In some cases, the first passage of meconium occurs before birth. This may occur in post-term pregnancies or because of fetal physiological stress before or during labour. Inhaling meconium prior to or during birth may lead to meconium aspiration syndrome, which is life threatening in severe cases.<sup>144</sup> Since meconium passage is related to the maturity of the gastrointestinal tract, meconium aspiration syndrome is a complication that may affect late preterm, term and post-term infants.

Refer to current clinical guidelines for guidance on fetal health surveillance and the Canadian Paediatric Society’s *Neonatal Resuscitation Guidelines* for the clinical management of labour and births involving meconium.<sup>145</sup>





## 8 CARE DURING BIRTH

### 8.1 EARLY VERSUS LATE PUSHING

The second stage of labour refers to the period from full cervical dilation until birth. It has become customary to acknowledge 2 phases of second stage, i.e., the latent phase in which passive fetal descent occurs and the active phase during which a woman pushes with contractions. This differentiation evolved as use of epidural analgesia during labour became more widespread, since epidural analgesia frequently delays a woman's perception of pressure and urge to push.<sup>45</sup>

The current practice is for women to delay pushing, even if they have fully dilated, until they feel the urge to do so. As a result, there has been a documented increase in the length of second stage, with a longer period of passive descent contributing most to this increase while time spent pushing has decreased. This is important because a longer duration of active pushing is more closely associated with adverse maternal or fetal effects.<sup>146-148</sup>

Professional organizations and committees have developed clinical practice guidelines for the second stage of labour in response to concerns about this increasing length of second stage and to promote best practices in the care of women at this time. The SOGC guideline *Management of Spontaneous Labour at Term in Healthy Women* recommends that pushing start when the cervix is fully dilated, the presenting part is engaged and the woman feels the urge to push. The guideline also describes other practices recommended in the second stage of labour.<sup>45</sup>

Women need to be supported in a position of comfort throughout labour—including during second stage. Being upright and frequently changing position may help relieve back pain. These have also been proposed as effective measures to stimulate an urge to push, correct malposition and promote progress.<sup>149,150</sup> When pushing, women need to be encouraged to follow their instinctive pushing behaviours. This usually involves waiting as the contraction builds until it reaches its peak, and pushing several times during a contraction with several breaths between attempts.<sup>146,149</sup> Spontaneous pushing can be supported by the constant presence of HCPs who offer praise, encouragement and acknowledgement of the woman's efforts, depending on the woman's wishes.<sup>149-151</sup> Routine provider-directed pushing that involves extended breath holding and sustained pushing throughout each contraction, often referred to as Valsalva pushing, is not recommended because of a lack of proven benefit and actual reports of harm.<sup>45,146,149,150,152,153</sup>



Although a maximum duration has not been established, it is important to ensure progress throughout second stage. In the absence of obvious signs of fetal descent, vaginal examinations are performed, ideally by the same HCP. If progress is satisfactory, the fetal heart rate is normal and maternal assessments are satisfactory, allowing second stage to continue beyond an arbitrary time-limit may increase the likelihood of vaginal birth without increasing the risk of adverse maternal or perinatal effects.<sup>154,155</sup> However, if there is no progress over 2 hours in a nulliparous woman or 1 hour in a parous woman in spite of adequate contractions, the reason could be obstructed labour, particularly if there is significant caput and molding; operative birth should be considered. The risk of maternal and perinatal morbidity increases with obstructed labour when second stage lasts more than 3 hours in the nulliparous woman or 2 hours in the parous woman.<sup>155,156</sup> The Consortium on Safe Labor studied the optimal duration for the second stage of labour and concluded that the 95<sup>th</sup> percentile for nulliparous women who did not have regional anesthesia was 2.8 hours (168 minutes) whereas for nulliparous women with regional anesthesia it was 3.6 hours (216 minutes). The 95<sup>th</sup> percentile for parous women was 2 hours with regional anesthesia and 1 hour without.<sup>106</sup>

## 8.2 EPISIOTOMY AND PERINEAL TRAUMA

Episiotomy has been described as a surgical incision into the perineum and vagina to assist with birth. It is one of the most common procedures worldwide.<sup>157,158</sup> Tears often occur during birth at the vaginal opening with the passage of the presenting part of the baby, especially if descent happens quickly.<sup>159</sup> Tears can be of the perineal skin and extend to the muscle layers and/or the anal sphincter and anus.

Various interventions have been shown to decrease trauma to the perineum during birth<sup>45,160-162</sup>:

- Using the lateral position;
- Avoiding pushing until the urge is felt;

- Applying warm packs to the perineum every 30 minutes during the second stage of labour;
- Changing position every 15 minutes to facilitate fetal descent and rotation;
- Allowing the woman to rest her feet on the bed rather than in stirrups or having them held;
- Avoiding manually stretching the woman's perineum during the second stage of labour.

HCPs are encouraged to talk to women in their care about these interventions and the best ways to decrease trauma to the perineum during birth.

Policies promoting selective use of episiotomies may result in less severe perineal/vaginal trauma compared to policies that support its routine use.<sup>159</sup> The SOGC recommends avoiding routine episiotomies in spontaneous vaginal births.<sup>45</sup>

## 8.3 WATER BIRTH

A number of women choose to immerse themselves in warm water during labour, and some choose to be immersed to give birth. There is some controversy regarding giving birth in water. The National Institute for Health and Care Excellence (NICE) guidelines recommend that caregivers “inform women that there is insufficient high-quality evidence to either support or discourage giving birth in water.”<sup>12, p.62</sup>



The American College of Obstetricians and Gynecologists (ACOG) takes a more conservative approach to water birth and recommends not delivering in water until there is sufficient data to support the practice.<sup>163</sup> The American College of Nurse-Midwives recommends that women be given the opportunity to remain immersed in water during birth provided that the decision is made jointly with their HCPs and they and their fetus are assessed.<sup>164</sup> Facilities are encouraged to have policies and protocols in place with respect to giving birth in the water.

## 8.4 SHOULDER DYSTOCIA

Shoulder dystocia is defined by Managing Obstetrical Risk Efficiently (MORE<sup>OB</sup>) as “the inability of the fetal shoulders to deliver spontaneously or with gentle traction during vaginal cephalic delivery. Additional obstetric maneuvers are required to deliver the fetal shoulders and body.”<sup>165</sup> The incidence of shoulder dystocia varies from 0.2% to 3.5%.<sup>166-171</sup> Further analysis shows this incidence to vary between 0.6% and 1.4% for infants weighing between 2500 g and 4000 g at birth and between 5% and 9% for infants weighing between 4000 g and 4500 g at birth.<sup>172</sup>

“ It is important to communicate openly with the woman to alleviate any stress or anxiety as there may be additional people in the room and urgent procedures to follow during the management of a shoulder dystocia.

Typical practices in the approach to delivering the shoulders once the fetal head is born have differed. Some HCPs apply gentle downward traction and encourage the woman to push to deliver the shoulders immediately after the head is delivered. However, if fetal wellbeing is of no concern and the head has delivered without a

problem, it is now recommended to wait for the next contraction for the shoulders to deliver.<sup>173</sup> If not directed to push after the birth of the head, 80% of women experience a pause before the body is born with the next contraction.

The physiological delay must be differentiated from prolonged head-to-body interval in cases of shoulder dystocia.<sup>167,173</sup> Provided fetal surveillance has been normal, fetal pH drops by a clinically insignificant amount during this pause.<sup>167</sup> Allowing restitution while waiting for the mother’s spontaneous urge to push with the next contraction facilitates spontaneous birth of the shoulders and may prevent shoulder dystocia.

The clinical management of shoulder dystocia is beyond the scope of these guidelines. Refer to clinical practice guidelines and resources such as SOGC’s *Advances in Labour and Risk Management* (ALARM) and MORE<sup>OB</sup>. It is important to communicate openly with the woman to alleviate any stress or anxiety as there may be additional people in the room and urgent procedures to follow during the management of a shoulder dystocia.

## 8.5 NUCHAL CORD

The significance and management of nuchal cord (when the umbilical cord is wrapped around the fetus’s neck) during birth is an important skill for maternal and newborn HCPs because it is common. The presence of nuchal cord varies throughout gestation, increasing near term, with the prevalence at birth approximately 25%. Research has demonstrated that nuchal cord may be associated with intrauterine growth restriction, atypical/abnormal fetal heart rate patterns, acidemia, a lower 1-minute Apgar score and perinatal mortality.<sup>174-176</sup> It is also associated with higher rates of operative or assisted birth.<sup>177</sup> However, other research shows no association between nuchal cord and significant adverse neonatal outcomes, even when it is tight.<sup>174,175,178</sup> The literature is less clear in the case of multiple loops of nuchal cord, and some research suggests interventions such as caesarean birth.<sup>179</sup>

The ability to detect nuchal cord on a prenatal ultrasound has added confusion to the debate about whether nuchal cord affects the management of pregnancy and labour or, indeed, if this information should be shared with the pregnant woman.<sup>174</sup> Current evidence suggests it is a benign finding at birth or on prenatal ultrasound.<sup>180</sup> The specificity and sensitivity of nuchal cord detection on ultrasound is also questionable.<sup>181</sup> Detection on an ultrasound is considered an incidental finding that should not influence care during labour, with neither additional monitoring nor laboratory investigations warranted.<sup>174-176,178</sup>

The 4 techniques generally used to manage nuchal cord include clamping and cutting the cord to release it from the presenting part; pulling a loop of cord over the presenting part; delivering the fetus through the cord; and the somersault manoeuvre. Delivering through the loop is the most likely to succeed because it requires the least amount of slack to slip the loop back over the fetus's shoulder.<sup>182,183</sup> Nevertheless, there is little in the literature on the benefits and risks of each method and there are no set guidelines on the management of nuchal cord.<sup>182,184</sup> One randomized controlled trial did not find any difference in outcome between clamping the cord immediately and looping the cord over the presenting part.<sup>185</sup> Factors that may influence management include the HCP's preference, needing to expedite the birth and the nuchal cord impeding the birth of the head or shoulders.

In obstetrics, clamping and cutting the cord has generally been the favoured technique. However, given the lack of evidence that nuchal cord has significant adverse perinatal outcome and that one method of management is better than another, efforts to leave the cord intact can promote delayed cord clamping.

## 8.6 ASSISTED VAGINAL BIRTH

According to the Canadian Institute of Health Information, the rate of assisted vaginal births—births aided by forceps or vacuum—has declined from 17.4% in 1991/1992 to 13.2% in 2015/2016. Specifically, the rate of vacuum extraction has increased from 6.8% to 9.2% while the rate of forceps-assisted birth has declined from 11.2% to 3.4% over that same period.<sup>136,186</sup>

The SOGC has identified a number of approaches that can decrease the need for assisted vaginal birth. One-to-one continuous labour support, administering oxytocin and flexibility in managing the second stage of labour, including an upright position, managing pain, flexibility in time limits or delaying pushing until the woman feels the urge to push can help decrease the need for assisted vaginal birth.<sup>187</sup>

A recent Cochrane review indicated that forceps were better at achieving a successful birth than vacuum extraction. However, forceps were associated with higher rates of complications for the mother, including perineal trauma, tears, incontinence and requirements for pain relief. There were risks of scalp injury and cephalohematoma to the baby with both types of instruments. The authors concluded that there is a place for the use of forceps and vacuum extraction based on individual situations and that it is important that caregivers be trained and skilled in using these instruments.<sup>188</sup>

The SOGC *Guidelines for Operative Vaginal Birth* discusses the prerequisites and contraindications to assisted vaginal births along with the application procedures and potential complications.<sup>187</sup> It is recommended that hospitals have a policy on instrumental vaginal birth that is based on existing clinical guidelines such as those of the SOGC, MORE<sup>OB</sup> or provincial guidelines. According to the CHMPPS, 47% of Canadian hospitals have such a policy.<sup>11</sup>



## 9 CARE IMMEDIATELY FOLLOWING BIRTH

### 9.1 UMBILICAL CORD CLAMPING

A significant percentage of the blood volume of the fetoplacental unit is found in the placenta at birth. If the cord is not clamped right away, placental blood passes into the newborn's circulation to the point where blood volume may be increased by up to 30%. Studies over the past decade have shown that delaying cord clamping for at least 30 to 60 seconds can benefit both preterm and term infants.<sup>189,190</sup>

In preterm infants, these benefits include higher blood pressure, fewer blood transfusions and decreased incidence of intraventricular hemorrhage (all grades) and necrotizing enterocolitis.<sup>191</sup> For term infants ( $\geq 37$  weeks), delaying cord clamping results in higher hemoglobin levels, and these infants are less likely to have iron deficiency at 3 to 6 months of age. Term infants who have delayed cord clamping are more likely to need phototherapy and be monitored for jaundice.<sup>191</sup>

The optimal time to clamp the cord is unclear. The SOGC recommends delaying cord clamping for 60 seconds for term and preterm infants not requiring resuscitation irrespective of the mode of delivery.<sup>45</sup> The SOGC also recommends delayed cord clamping in the extremely preterm infant, and when delayed cord clamping is not possible, cord milking should be considered as

an alternative.<sup>92</sup> The ideal position for the infant is also uncertain; a Cochrane review concluded further large scale studies are needed on the effect of gravity on placental transfusion.<sup>192</sup> The SOGC guidelines *Umbilical Cord Blood: Counselling, Collection, and Banking; Active Management of the Third Stage of Labour: Prevention and Treatment of Postpartum Hemorrhage; and Management of Spontaneous Labour at Term in Healthy Women* provide further guidance.

### 9.2 CORD BLOOD BANKING

Parents may have decided to bank their newborn's umbilical cord blood. The SOGC recommends that umbilical cord blood collection must not adversely affect the health of the mother or newborn, and cord blood collection should not interfere with delayed cord clamping.<sup>193</sup> Given the benefits of delaying cord clamping, policies/procedures surrounding the collection of cord blood should not take precedence over practices beneficial to the infant. It is important that parents be aware that cord blood collection following delayed cord clamping is not contraindicated but that the delay may affect the volume of cord blood available for banking. The SOGC guideline *Umbilical Cord Blood: Counselling, Collection, and Banking* provides further guidance.<sup>193</sup>

### 9.3 EARLY SKIN-TO-SKIN CONTACT

All major organizations concerned with newborn health, including the SOGC, the Breastfeeding Committee for Canada, the Canadian Paediatric Society, the American Academy of Pediatrics and WHO recommend that healthy infants have direct skin-to-skin contact with their mothers immediately after birth. Skin-to-skin contact generally involves placing the naked newborn infant on their mother's bare chest, covering the infant with a blanket and ensuring that contact is uninterrupted at least until the first feeding is completed. A recent study concluded that "mother-infant immediate skin-to-skin contact is an easy and available method of enhancing maternal breastfeeding self-efficacy."<sup>194, p.40</sup> Skin-to-skin contact has also been shown to improve:

- Maternal and newborn temperature;
- Placenta expulsion;
- Oxygenation, glycemia and neuromotor organization in the newborn;
- Initiation, exclusivity and duration of breastfeeding;
- Weight gain in the newborn;
- Quality of mother-baby interactions.

It has also been shown to<sup>195-196</sup>:

- Lower salivary cortisol;
- Reduce pain reactions during painful procedures;
- Reduce maternal anxiety (both short and long term);
- Reduce crying and infant stress.<sup>195,196</sup>



Prioritizing early skin-to-skin contact means viewing a mother and a baby as a couplet or inseparable unit and not allowing routine hospital procedures or practices to violate this unity. Convenience to HCPs should neither outweigh the need for early skin-to-skin contact nor play a role when deciding how to facilitate the practice. Anything that is not essential to the immediate wellbeing of the infant or mother can wait for 2 hours after birth or after the first breastfeeding. If a procedure is medically necessary, it can be done while the newborn remains in skin-to-skin contact as long as it is medically safe to do so. This includes measuring, doing hand or foot prints, giving vitamin K injections, examining the newborn and administering antibiotic ointment to the eyes. Skin-to-skin contact can continue during transfer from the birthing unit to the postpartum unit. For guidelines for safe skin-to-skin contact see [Appendix C](#).<sup>197</sup>

It is also clear that infants born preterm need skin-to-skin contact with their parents, although when that contact is initiated varies widely from centre to centre. In some European centres, preterm infants are kept with their mothers during assessments, and couplet care is practised within the neonatal intensive care unit.<sup>198</sup> Although Canadian NICUs have generally not been constructed to allow this model of couplet care, mothers and babies should be reunited to facilitate skin-to-skin care as soon as possible. Many centres are strongly advocating for skin-to-skin holding, even of very preterm, ventilated and low birth-weight infants, because of the clinical and psychological benefits to both infant and parent.<sup>199</sup>

Regardless of the place or the circumstances of birth, HCPs must work collaboratively to address barriers and educate parents and other providers about the importance of early skin-to-skin contact.

## 9.4 POSTPARTUM HEMORRHAGE

Postpartum hemorrhage affects approximately 6% of women globally and is the leading cause of maternal mortality worldwide.<sup>200</sup> In Canada, a diagnosis of postpartum hemorrhage was associated with 1.4 maternal deaths per 100 000 hospital deliveries from 2002 to 2010.<sup>73</sup> From 2010 to 2015, it was the second most common severe maternal morbidity, at a rate of 483.9 per 100 000 hospital deliveries.<sup>73</sup>

Postpartum hemorrhage is defined as blood loss of more than 500 mL during vaginal birth or more than 1000 mL during caesarean birth.<sup>201</sup> The primary cause of immediate postpartum hemorrhage is uterine atony. Other causes include uterine rupture, morbidly adherent placenta and uterine artery extension/laceration during

caesarean birth. Postpartum hemorrhage can be caused by disorders of uterine tone, retained placenta, genital tract trauma or coagulation. Many women have pre-existing conditions that predispose them to postpartum hemorrhage, for example, multiple gestation, uterine fibroids, known coagulopathy or a prior history of postpartum hemorrhage.

The SOGC guideline *Active Management of the Third Stage of Labour: Prevention and Treatment of Postpartum Hemorrhage* provides further guidance.<sup>201</sup> No procedure will change a woman's outcome if not trained for and effectively implemented. The approach to managing postpartum hemorrhage is best rehearsed as a team. A debrief, between the HCP and woman as well as the health care team, following a postpartum hemorrhage is valuable.



## 10 INDUCTION OF LABOUR

Induction of labour refers to the artificial initiation of contractions prior to the spontaneous onset of labour. Induction is indicated when the risks of prolonging the pregnancy to the mother and/or baby exceed the risks associated with induction. The purpose of induction is to decrease maternal and perinatal morbidity and mortality with a goal of achieving a vaginal birth.

The rate of induction has increased in Canada since the early 1990s. National rates of induction have risen from 12.9% in 1991–1992 to 21.8% in 2004–2005.<sup>44</sup> Rates vary by province and are highest in eastern Canada, approaching 25%.<sup>202</sup> The Mother-friendly Childbirth Initiative has suggested an induction rate of 10% or less is ideal.<sup>203</sup>

The most commonly cited indication for induction is *postdates* ( $\geq 41^{+0}$  weeks) pregnancy. Post-term pregnancy ( $\geq 42^{+0}$  weeks) is associated with increased risk of perinatal mortality and morbidity.<sup>44</sup> Current Canadian guidelines recommend offering induction between 41<sup>+0</sup> weeks and 42<sup>+0</sup> weeks gestation, to prevent post-term ( $>42^{+0}$  weeks) pregnancies. Other medical indications for induction include preeclampsia, multiple pregnancy, term pre-labour rupture of the membranes, suspected fetal compromise and insulin-requiring diabetes. Women who are 40 years and older may also be considered for induction at 39 weeks, given their higher risk of stillbirth.<sup>44</sup>

Family-centred care supports judicious use of interventions that promote normal labour and birth. Induction is associated with an increased risk of operative birth.<sup>44,204-206</sup> It is also linked to interventions such as CEFM and use of analgesia during labour. Additional risks include inadvertent preterm birth and the adverse effects of inducing agents. Because of these risks and others, induction prior to 41<sup>st</sup> weeks in the absence of other medical indications is not advised by the SOGC.<sup>44</sup> Prior to initiating an induction for any reason, it is important to discuss these risks with the woman so that she understands what is involved.

Women may also explore alternative or complementary methods of inducing labour such as castor oil, intercourse, acupuncture or breast stimulation. A review determined varied outcomes for these methods.<sup>207</sup> HCPs can discuss these options with women based on best evidence. The SOGC guideline *Induction of Labour and Guidelines for the Management of Pregnancy at 41<sup>st</sup> to 42<sup>nd</sup> Weeks* provides further advice on indications, contraindications, induction options and management.<sup>44,208</sup>



## 11 CAESAREAN BIRTH

In 2015/2016, 27.9% of births were by caesarean, making it the number one reason for inpatient surgery.<sup>209,210</sup> Caesarean birth avoids the risk of labour for the mother and fetus, but carries an increased risk of immediate maternal morbidity and mortality as well as elevated future risk of stillbirth, abnormal placentation and repeat caesarean birth. Caesarean birth is also associated with less neonatal immune activation and a greater incidence of childhood asthma and atopic disease.<sup>211</sup>

### 11.1 OPTIMIZING RATES OF CAESAREAN BIRTH

The caesarean birth rate has risen across the country since the last *Family-Centred Maternity and Newborn Care: National Guidelines* were published in 2000. In some provinces the caesarean birth rate is approximately 1 in 3.

Data from hospital report cards produced by the Canadian Institute for Health Information note that caesarean birth rates and rates of vaginal births following caesarean vary greatly between institutions. Even among women with singleton first pregnancies with the baby in a vertex position, caesarean birth rates differ markedly, suggesting that clinical practice patterns influence outcomes.<sup>212</sup> According to a recent Canadian study, the group making the largest relative contribution to increasing the caesarean birth rate is women who have a singleton pregnancy at term with a baby who is vertex position and who have had at least 1 previous caesarean birth.<sup>213</sup>

While caesarean birth rates have increased, there has not been a concomitant decrease in maternal or infant mortality. The ACOG has stated that this finding suggests possible overuse of this

intervention. WHO and the Mother-friendly Childbirth Initiative have indicated that the international health community considers a caesarean birth rate of 10% to 15% to be ideal.<sup>203,214</sup> Whether this is appropriate in the Canadian context is debatable given some of the factors that impact the Canadian rate. Nevertheless, optimizing caesarean birth rates is critical, as is recognizing that for most women a plan for vaginal birth is appropriate and attainable.

For women who have not had a prior birth, the most common indications for caesarean birth include labour dystocia, abnormal or atypical fetal heart rate tracing, fetal malpresentation, multiple gestation and suspected fetal macrosomia.<sup>216</sup> Interventions tailored to these specific indications may optimize caesarean rates. Similarly, since studies suggest that vaginal birth for twins, VBAC and planned vaginal birth for babies in a breech position are safe when certain criteria are met, these could assist in optimizing caesarean birth rates.<sup>217,218</sup> In addition, renewed attention on labour curves and the later diagnosis of labour dystocia for first-time mothers and parous women may also decrease caesarean birth rates.<sup>106,219</sup>

## 11.2 VAGINAL BIRTH AFTER CAESAREAN BIRTH

Increasing rates of caesarean births is largely attributed to women having a repeat caesarean birth.<sup>213</sup> It is essential that women be provided with information regarding the risks and benefits of having a vaginal birth after a previous caesarean so that they can make an informed decision.<sup>220–222</sup>



Evidence and professional guidelines generally agree that labour and VBAC is a safe and appropriate option for most women.<sup>222–225</sup> Data on outcomes suggest that 60% to 80% of women who choose a VBAC are successful.<sup>225–228</sup> The SOGC guidelines support a trial of labour for women who have had 1 prior caesarean birth in the absence of contraindications, only advising that “a trial of labour in women with more than 1 previous caesarean is likely to be successful but is associated with a higher risk of uterine rupture.”<sup>222, p.164</sup> Despite this, since the mid-1990s the rate of VBAC has declined dramatically in Canada, with the repeat caesarean birth rate having increased from 64.7% in 1995/1996 to 81.0% in 2015/2016.<sup>136,202</sup>

### FACTORS CONTRIBUTING TO THE INCREASING CAESAREAN BIRTH RATE<sup>215</sup>

- Decreasing tolerance for fetal risk (e.g., routine caesarean birth for breech presentation);
- Decreasing tolerance for perineal trauma (caesarean birth instead of forceps birth);
- Overestimation of risk with labour after prior caesarean birth (decreased vaginal birth after caesarean birth [VBAC] rates);
- Lack of access to doula support in labour;
- Loss of obstetrical skills among obstetricians (vaginal breech; operative vaginal birth; vaginal twin birth);
- Use of electronic fetal monitoring without access to fetal scalp sampling (caesarean birth for false positive atypical or abnormal fetal heart rate tracing);
- Increasing maternal obesity;
- Increasing induction of labour (convenience, avoidance of postdates risk);
- Increasing use of epidural analgesia with inadequate labour augmentation;
- Maternal preference (scheduling, fear, avoidance of labour, convenience);
- Obstetrician preference (scheduling, income generation).

The most current and highest quality research supports VBAC as a safe choice for the majority of women with a prior lower segment caesarean birth, and overall rates of maternal and perinatal complications are low for both VBAC and elective repeat caesarean birth.<sup>229</sup> The Mother-friendly Childbirth Initiative has suggested a VBAC rate of 60% or more, with a goal of 75%.<sup>203</sup> The most significant morbidity for both mother and baby is related to the risk of uterine rupture. Current literature identifies that the risk of uterine rupture with a trial of labour is 1/200 and the risk of an adverse perinatal outcome due to the rupture (neonatal brain damage or perinatal death) is 1/2000.<sup>229,230</sup> Serious maternal morbidity is equivalent overall with a trial of labour or elective caesarean birth.

Successful VBAC has the lowest risk—but emergency caesarean birth has greater morbidity than an elective caesarean birth.<sup>231</sup> In other words, “A successful vaginal birth after caesarean carries the least amount of risk for the mother and baby; an unsuccessful planned vaginal birth after caesarean (requiring an unplanned caesarean) carries a higher risk. A repeat caesarean is somewhere in the middle.”<sup>231, p.5</sup>

Refer to the SOGC *Guidelines for Vaginal Birth After Previous Caesarean Birth*, which identify the contraindications to a trial of labour following a caesarean birth as well as management of labour, augmentation and induction.<sup>222</sup>

### 11.3 FAMILY-CENTRED CAESAREAN BIRTH

The experience of caesarean birth, whether elective or emergency, increases anxiety in most women and families. A number of options, however, can be made available to facilitate a family-centred caesarean birth—and hospital policy needs to accommodate the support of the family unit, involvement of family, non-separation of mother and baby, and communication and respect.

If a caesarean birth is planned or anticipated, it is critical for women and their families to understand what will happen—the procedure and recovery—and who will be present during their baby’s birth so that they can prepare. Understanding the roles of the different HCPs who will provide care is important. Women also need to know about any preparation before they arrive at the hospital, for example, when to stop eating and drinking, and what will happen after they arrive, for example, blood work and intravenous and spinal insertions. It is recommended that the woman be supported in her choice of support person—and that the role of the support person be discussed and made clear in advance. If any situations might preclude the support person’s presence, these too need to be discussed in advance.

It is important to balance the requirements for surgical safety with the needs of the infant and the family. Events surrounding birth can influence health and wellbeing long-term in both the parents and the newborn. Skin-to-skin contact can be facilitated in the operating room immediately after elective or emergency caesarean birth with the mother or the father/support person if the mother is unable.<sup>232</sup> HCPs can ensure the initial stability of the infant and assess the maternal condition while encouraging skin-to-skin contact. Keeping the newborn in the operating room skin-to-skin on the upper chest of the mother, or if that is not possible for medical reasons, on the chest of the father or the chosen support person promotes all the same benefits as with a vaginal birth. Separation should occur only if medically indicated by the health of the mother or infant.

Once surgery is completed, the baby can be moved, still skin-to-skin, with the mother or family, to the recovery room. In addition, it is important to promote breastfeeding as soon as the baby shows signs of readiness. It is recommended that these practices be promoted through hospital policies.

Refer to [Appendix D](#) for recommendations on providing safe skin-to-skin contact during a caesarean birth.



## 12 MULTIPLE BIRTHS

Multiple births are on the rise in Canada, mainly due to assisted human reproduction and higher maternal age.<sup>233,234</sup> In 2014, the rate of multiple births was 3.3% of all births.<sup>73</sup> The rate of increase is greater in higher-order multiples (triplets, quadruplets, etc.) than for twins.<sup>202</sup>

Women giving birth to multiple infants may be more anxious about childbirth. This could be due to having had to travel to a hospital far from home for the birth, the anticipation of premature babies, or the stress of having to care for more than one newborn. A plan of care, such as choosing between a vaginal or caesarean birth, is ideally discussed during pregnancy and, upon her arrival to the birthing unit, HCPs should respect this plan of care and provide family-centred care.

“ Women giving birth to multiple infants may be more anxious about childbirth. This could be due to having had to travel to a hospital far from home for the birth, the anticipation of premature babies, or the stress of having to care for more than one newborn.

If a woman is having a planned vaginal birth, it is recommended that continuous electronic fetal heart rate monitoring for all babies follow current clinical guidelines such as the SOGC's *Fetal Health Surveillance: Intrapartum Consensus Guideline* and the Canadian Perinatal Programs Coalition's *Fundamentals of Fetal Health Surveillance Manual*.<sup>117,119</sup> A vaginal birth of triplets, if the woman requests this, may be an option with appropriate consultation and availability of resources.

Current SOGC, ACOG and WHO guidelines do not differentiate between singleton and multiple births with respect to delayed cord clamping.<sup>193,235,236</sup> This is an important topic of discussion with the mother and an area in need of further research.

In the rare instances that women arrive at the hospital with undiagnosed multiples, every effort should be made to access their prenatal records and imaging studies. Care can proceed as for planned twin births including a vaginal birth. In the case of multiple pregnancies of preterm gestation, caesarean birth may be preferable in the setting of fetal malpresentation.



## 13 BREECH BIRTHS

Approximately 3% to 4% of term fetuses are in a breech presentation.<sup>237</sup> The risk to the fetus is higher with breech versus cephalic labour, and in many jurisdictions, it is common practice to deliver breech babies by pre-labour caesarean birth.

The safety of labour for a persistent breech fetus has been hotly debated. The Term Breech Trial suggested that 5% of breech fetuses would experience severe morbidity or mortality with a trial of labour.<sup>238</sup> However, serious methodological concerns included allowing labour with fetuses with known growth restriction; allowing prolonged first and second stages; not using ultrasound or continuous monitoring; and not requiring in-house surgical capability.<sup>238-240</sup> In obstetrical settings with careful selection and intrapartum labour management of women with breech fetuses, the risk of a trial of labour to the fetus has been reliably demonstrated to be much lower: significant short-term morbidity in up to 2% and perinatal mortality in approximately 1/500 to 1/1000 trials of labour.<sup>241</sup>



As more babies in breech position are born by caesarean birth, the obstetrical profession is losing its collective skills to care for women having a vaginal breech birth. If hospitals do not have obstetrical staff skilled in breech birth they could offer to refer women requesting a trial of labour to a hospital with staff who do have the necessary skills.<sup>242</sup> When the nearest such hospital is far away, it may not be logistically feasible for a women to transfer her care or attend the other hospital while in labour. Some hospitals have established on-call systems where experienced obstetrical staff skilled in breech birth back up junior colleagues for the second stage and birth of breech births. Other hospitals offer women irregular access to a breech birth depending on the skill set of the obstetrician who is on call.

Refer to the SOGC guideline *Vaginal Delivery of Breech Presentation* for the clinical management of breech births. A woman with a persistent breech fetus at term may be assessed for suitability for a trial of labour. If she is a good candidate, she needs to be informed about the options available to her, namely a trial of labour or pre-labour caesarean birth. The respective risks of each option need to be discussed, including the maternal morbidity and mortality associated with birth.<sup>239</sup>



## 14 MATERNAL TRANSFER OF CARE

### 14.1 TRANSFER FROM HOME/ BIRTHING CENTRE TO HOSPITAL

Approximately 20% to 25% of planned out-of-hospital births in Canada involve transfer to hospital during labour or postpartum.<sup>243-245</sup>

The majority of these are not emergencies—women are transferred before a complication or emergency develops. Sometimes women may choose to go to the hospital for pain medications or because labour is not progressing. In these situations the woman, her family and the HCP will discuss the options and make a decision together. Emergency transfer to hospital during home or birthing centre births happens in a relatively small percentage of these births.<sup>246,247</sup>

The key objective for women, families and HCPs during any transfer is a safe childbirth resulting in a healthy mother and baby. Collaborative care throughout pregnancy, birth and postpartum is paramount to safety whenever birth is planned outside the hospital setting. Coordination of care and communication of expectations during transfer of care improves outcomes and results in a better experience for women and families. The core principles of FCMNC need to be respected whenever women and families are transferred—information sharing and communication; focusing on the needs of the individual woman and family; keeping families together; and supportive care. It is important to

provide continuity of care to family members as they move between the referring and receiving centres. Mechanisms must be in place to ensure proper communication with the receiving hospital when a transfer is needed.

Whenever transport is required, a safe and smooth transfer is the goal. Decisions about transfer need to be based on the clinical situation and the woman's needs. It is important that HCPs talk with the woman and her family about the reasons they are considering transfer, the options and what to expect during the transfer. It is critical to address the woman's concerns and work to alleviate any anxieties. Informed consent must always be obtained.<sup>247</sup> Women who have planned an out-of-hospital birth and require transfer to hospital may feel grief and loss of the labour and birth they had planned. They need to be supported through these feelings and given the opportunity for follow-up conversations.

“ Coordination of care and communication of expectations during transfer of care improves outcomes and results in a better experience for women and families.

It is essential for communities/institutions to have policies and quality improvement processes regarding transfer from homes or birthing centres to hospitals. It is recommended that everyone involved in the process—midwives, family physicians, obstetricians, pediatricians, nurses, emergency medical services providers and families be involved in developing the policies.

## 14.2 TRANSFER FROM HOSPITAL TO HOSPITAL

It has been demonstrated that in some instances neonatal and obstetrical care in centres of varying levels of care could reduce perinatal mortality. *Toward Improving the Outcome of Pregnancy* published in 1975, first articulated that the care of mothers and newborns could be divided into 3 levels of complexity.<sup>248</sup> Over time the regionalization of care has primarily focused on the care of the newborn. More recently, the American College of Obstetrics and Gynecology outlined a framework of 5 levels of maternal care (from birthing centre to regional perinatal health centre).<sup>249</sup> The document does not address home birth. The framework describes who should be cared for in various risk-appropriate settings in an effort to improve maternal morbidity and mortality. At present there is no well-defined national Canadian model of maternal levels of care. Women often may be transported to hospitals because of the anticipation of complex care for the newborn.

The transport of mothers from one medical facility to another can often involve large distances. As Canada is a country with varied geography and weather, a coordinated system of transport and remote support is ideal. Transport systems can be managed provincially (e.g., provincial ambulance service) or privately (i.e. STARS [Alberta], Advanced Medical Solutions [NWT], Ornge [Ontario]).

Ideally, the goal is to transfer the woman before she gives birth rather than transporting after the birth. To facilitate transport, it is vital that the receiving hospital and the method

of transportation are clearly identified and that the receiving and sending HCPs are communicating. It is important that the woman and family are informed promptly of transfer plans and possible changes.

In some instances it may not be possible to provide maternal transport, for example, if weather or road conditions preclude travel; the woman is medically unstable (e.g., due to severe hemorrhage); birth is anticipated before arrival at the other facility; or birth is imminent due to fetal concerns (e.g., abnormal fetal heart). The woman may also decline transfer to higher level of care.

Transport and transfer to another facility can be extremely stressful for the mother and her family who may, as a result, face additional social and financial stresses. Involvement with social workers at both the sending and receiving facilities may be invaluable. Involving community groups to assist with accommodation may also be helpful.

Refer to provincial/territorial and institutional transfer guidelines/policies for recommendations based on jurisdictional circumstances.

## 14.3 TRANSFER FROM HEALTH CARE PROVIDER TO HEALTH CARE PROVIDER

Situations may arise during labour and birth that require the transfer of care—usually from a midwife or family doctor to a specialist. It is recommended that local programs/institutions develop protocols for transfer of care that are based on the guidelines developed by their colleges and the context of their local situation. Such protocols must be created with interprofessional collaboration in order to facilitate optimal maternal and newborn safety. Such collaboration promotes the active participation of each HCP in providing quality care. Collaborative care “is woman-centered, respects the goals and values of women and their families, provides mechanisms for continuous communication among caregivers, optimizes caregiver participation in clinical decision making (within and across disciplines), and fosters respect for the contributions of all disciplines.”<sup>250, p.5</sup>

If care is transferred between providers, communication among a woman's HCPs is critical to ensure safe and comprehensive care. NICE has identified general principles for transfer of care between providers that recommend<sup>12</sup>:

- Decisions are based on clinical findings;
- Options are discussed with women and families/birth companion(s);
- Communication with women and family/birth companion(s) includes explaining the reasons for the transfer and what they can expect;
- Women's wishes are respected;
- Informed consent is obtained;
- Communication is maintained;
- Families are not separated.



## 15 DEBRIEF AFTER BIRTH

### 15.1 FOR WOMEN AND FAMILIES

Having a baby is a complex life event. Adjusting to events during pregnancy, birth and new parenthood is often stressful. Although most women have safe and satisfying labour and birth, some do not go as planned, but result in complications and even loss. Women can experience giving birth as physically or emotionally traumatic, which can affect their long-term emotional wellbeing and future pregnancies and births. Coming to terms with an obstetric emergency, unexpected obstetric interventions, preterm birth, the birth of a baby with special needs, a stillbirth or intrauterine death, an unexpected admission to intensive care or obstetric emergencies can be complex and difficult. “What is most important is the woman's individual experience of the birth as traumatic rather than whether objectively the birth went well.”<sup>251, p.13</sup>

NICE recommends that caregivers offer advice and support to women who have had a distressing labour, birth or loss and wish to talk about their experience. HCPs can also encourage them to accept support from family and friends. The Institute also recommends taking into account effects on the partner.<sup>12</sup> It is also important to recognize that recovery is a process and some families may not be ready at a particular time; offering the option of discussing their experience in the future is recommended. The conversations have to happen when women and families are ready—and not on the schedule of institutions. NICE further recommends that caregivers not offer single-session high-intensity psychological interventions with an explicit focus on *reliving* the trauma to women who have a traumatic experience.<sup>12</sup>

NICE explored the experiences of psychosocial interventions for a distressing birth with women through qualitative research. The Institute found that women were positive about the discussions and debriefing following such a birth. They were grateful for the opportunity to ask questions and have them answered fully and honestly; they felt it was important to their understanding of events—and ultimately to accepting them. Women were also positive about the involvement of their birth partner in these discussions, so they could share each other’s version of the experience.<sup>12</sup>

## 15.2 FOR HEALTH CARE PROVIDERS

It is important that institutions and caregivers review unexpected or adverse labour and birth events. It is recommended that programs and facilities that provide care during labour and birth have an established process of staff debriefing after such events, identifying strengths and opportunities for improvement.<sup>252</sup> It is critical that all personnel involved in the unexpected or adverse event be involved in the debriefing. Hospital policies should consider confidentiality and protection from legal discovery of debriefing.

Two components are necessary to the debriefing—emotional support for staff and a process of learning from the incident. Historically, perinatal morbidity and mortality committees or critical incident meetings have provided opportunities for staff to discuss the clinical management to aid in improvement of future care. However, they have not usually included any discussions about the emotional needs and support of staff, despite that those involved are affected emotionally to varying degrees depending on their personality, training and experience.<sup>253</sup> While it is important to separate the 2 components, it is also important to offer both emotional support and the potential to learn from the incident.

Reviews of difficult situations or adverse outcomes should be regularly scheduled so they are an inherent part of the facility routine rather than a casual process. It is recommended that these reviews be interprofessional in nature.

Such reviews are often known as *morbidity, mortality and improvement conferences*, and they are an effective way to engage multiple members of the health care team in a collaboration that focuses on potential systems-based improvements in care and safety. The discussion needs to be nonjudgmental so that caregivers do not fear accusation and criticism as any such fear suppresses honest information sharing and is less likely to result in improvements. Participants are encouraged to identify potential system failures and then put in place mechanisms for follow-up.<sup>254,255</sup> It is important that critical incident and risk management policies and guidelines clearly define what constitutes a critical incident. Ethical guidelines should address confidentiality in relation to reporting adverse events and medical error.<sup>253</sup> Forms can be used to document the review process.

Critical incident debriefing models (such as Mitchell) can be used to provide emotional support for staff.<sup>253</sup> Whatever approach is taken the objectives are to alleviate their stress, promote their health and help them find ways to work through their feelings of grief and loss to allow staff to return to optimal functioning.<sup>253</sup> It is important that experienced professionals—clinical counsellors or peers with similar experiences—lead timely debriefings. Staff could explore activities that they may find valuable, for example, attending funerals, and could be encouraged to do so, while taking into account any risk management issues.



Programs and guidelines that help HCPs debrief include the MORE<sup>OB</sup> program, a professional development and performance improvement program that focuses on reviewing events to find their root causes in order to understand why decisions were made and how organizational

systems affect care and to enable caregivers to learn and develop competence with their interprofessional peers. The program makes recommendations to prevent similar events in the future.



## 16 OPTIMIZING QUALITY OF CARE

### 16.1 APPROPRIATE LEVEL OF TECHNOLOGY

Many professional groups have noted the increased use and availability of technology and its impact on childbirth. The inappropriate and unnecessary use of technology can increase maternal and fetal risks. This concern should not overshadow the judicious and necessary use of technology in labour and birth and the benefits that technology has brought to the field. Ideally, the adoption of new technologies in labour and birth care will have been accompanied by rigorous evidence to show their benefit for mothers and their babies, their cost effectiveness and their compatibility with professional guidelines.

“ The adoption of new technologies in labour and birth care will have been accompanied by rigorous evidence to show their benefit for mothers and their babies, their cost effectiveness and their compatibility with professional guidelines.

### 16.2 CONTINUOUS QUALITY IMPROVEMENT

Continuous quality improvement is a focus of federal and provincial/territorial governments and health care organizations. Accreditation Canada has defined quality care in terms of 8 *quality dimensions*: accessibility, client-centred, continuity, effectiveness, efficiency, population focus, safety and work life.<sup>256</sup> Health care teams are using indicators to measure outcomes, set targets where appropriate and evaluate performance within the context of the quality dimensions.

One important indicator is the caesarean birth rate. Consensus on what constitutes an optimal rate does not exist, even though WHO recommends an optimal rate of 10% to 15%. The overall rate in Canada has increased steadily, from 17.6% in 1995/1996 to 27.9% in 2015/2016.<sup>202,209</sup> Provincial and territorial rates vary considerably.

Many organizations are using the Robson 10-Group Classification System to systematically examine caesarean births.<sup>213,257</sup> This method groups pregnancies resulting in caesarean birth according to parity, presentation, history of caesarean birth, onset of labour (induced, spontaneous or no labour) and gestational age. The caesarean birth rate of each group, the size of the group as a proportion of the total number of women giving birth and the contribution of each group to the overall caesarean birth rate are calculated to provide an objective measure to monitor trends and allow comparisons with other jurisdictions or facilities. Strategies that aim to safely decrease the number of caesarean births can focus on those groups where the impact may be the greatest. The SOGC recommends the use of a modified Robson criteria for Canada in their guideline *Classification of Caesarean Sections in Canada: The Modified Robson Criteria*, which includes additional sub-classifications for some groups.<sup>212</sup>

Other important parameters of quality need to be monitored. These include maternal and newborn morbidity and mortality; fetal health surveillance and use of electronic fetal monitoring and intermittent auscultation; VBAC rates; rates of intervention such as episiotomy, induction and assisted births; use of analgesia techniques for labour and birth; and ambulation and position for birth. Most provinces and territories have databases that look at quality indicators. Population health data on obesity, tobacco use, income, education and other factors that affect labour and birth are also important indicators. Data on these indicators can be gathered and analyzed in order to create strategies that address shortfalls.

In addition to monitoring important clinical outcomes, organizations must try to ensure that care is responsive to the needs of women, families and the community. Their input is essential in planning services and evaluating the care provided. This includes assessing indicators that address culturally competent care and women's experience of labour and birth.

Caregivers must be committed to continuous learning and participate in regular interprofessional education, such as all HCPs who attend birth maintain their current Neonatal Resuscitation Program registration. The *CHMPPS* revealed that 88% of hospitals had a policy that required maintaining skills in neonatal resuscitation for nurses, 71% had such a policy for physicians and 90% had such a policy for midwives.<sup>11</sup> Equally important is participation by all members of the care team in regular, interprofessional education in fetal health surveillance. Skilled fetal health surveillance, both fetal heart auscultation and electronic fetal monitoring, requires use of consistent terminology and a standard approach to interpretation and documentation of the fetal heart rate or tracing by all members of the team. Education may be provided through workshops, case reviews or other activities that encourages participation by all disciplines.

Many labour and birthing units in Canada have completed or are enrolled in MORE<sup>OB</sup>, a comprehensive performance improvement program that provides the tools for caregivers to develop essential clinical and interpersonal skills. All program activities take place on-site with local team members. Simulation is used to safely practise assessment and the skills needed in critical situations. MORE<sup>OB</sup> encourages the enrolment of all disciplines involved in labour and birth in order to foster the interprofessional teamwork, collaboration and communication that promote safety.



Advances in Labour and Risk Management (ALARM) is a continuing education program for obstetricians, family physicians, midwives and nurses that is offered by the SOGC and the College of Family Physicians of Canada. The program includes case-based plenary sessions and hands-on practice that allow participants to learn and/or improve clinical and communication skills. Successful completion of an ALARM course is a requirement for practice in many facilities. The CHMPPS revealed that 51% of hospitals had a policy that required nurses to maintain their skills in emergency obstetrics, 65% had such a policy for physicians and 68% had such a policy for midwives.<sup>11</sup>

In addition to participating in courses and other continuing education activities, regular practice of skills by all team members is beneficial. For example, periodic and non-scheduled *mega codes* for Neonatal Resuscitation Program practice can increase competence and confidence. Practice sessions for situations such as shoulder dystocia or postpartum hemorrhage have a similar effect. Learning from morbidity and mortality reviews is also an important aspect of ongoing quality improvement for facilities. Sessions for debriefing following critical events provide opportunities for learning and improving care and team functioning.

### 16.3 STANDARD OF CARE: ONE-TO-ONE NURSING/ MIDWIFERY CARE

The SOGC recommends that women in active labour receive continuous one-to-one labour support from an appropriately trained person.<sup>117</sup> When staffing is being planned, keeping the nurse or midwife by the woman's side to provide supportive care should be emphasized.

Administrators need to explore creative, flexible ways to ensure that nurses provide effective and supportive care. The peaks and valleys in the use of labour units make this a challenging issue.

A policy of on-call, standby, part-time labour pools to support the baseline staff is critical to maternity services. The Canadian Nurses Association (CAN) offers staffing guidance in their position statement *Staffing Decisions for the Delivery of Safe Nursing Care*.<sup>258</sup> The SOGC guideline *Management of Spontaneous Labour at Term in Healthy Women* recommends continuous one-to-one labour support for each woman.<sup>45</sup>

Other approaches that enable nurses and other HCPs to provide supportive care include:

- Endorsing supportive care as of equal or greater value than technical care;
- Establishing educational courses that teach the art and science of labour support;
- Instituting structural changes and systems so that recording of care is done in women's rooms, for example, by including strategically placed chairs and computers in their rooms;
- Eliminating requirements that nurses perform non-nursing and ineffective activities.

## 16.4 COMMUNICATION BETWEEN HEALTH CARE PROVIDERS

Many HCPs are engaged in the care of women during labour and birth. Communication between HCPs is essential to providing optimal care—as is reiterated throughout these guidelines. The SOGC guideline *The Roles of Multidisciplinary Team Members in the Care of Pregnant Women* and CNA's *Interprofessional Collaboration* position statement both identify communication between team members as a characteristic of a successful team.<sup>259,260</sup> Interprofessional communication is also a focus of the MORE<sup>OB</sup> program, which identifies the Situation, Background, Assessment and Recommendation (SBAR) technique that facilitates communication between providers.

## CONCLUSION

Providing FCMNC to women and families during labour and birth is an essential component of all institutions, agencies, programs and HCPs involved in their care. Focusing on the needs and values of the woman and her family along with her and her infant's safety and security are central to this care. This chapter shows that there is strong evidence that women are looking for and are more satisfied with care that is respectful

and responsive to their needs and wishes. They want to work in partnership with the HCPs they choose to guide their care and are looking for information and open communication. Childbirth is a significant life event that shapes families' relationships and their future. It is a privilege for HCPs and organizations to be involved in this important phase of life.

## APPENDIX A—ADDITIONAL RESOURCES

### CLINICAL PRACTICE GUIDELINES RELATING TO LABOUR AND BIRTH

#### Canadian Paediatric Society

[www.cps.ca/en/documents/authors-auteurs/fetus-and-newborn-committee](http://www.cps.ca/en/documents/authors-auteurs/fetus-and-newborn-committee)

#### Perinatal Services BC—Maternity Care Pathway

[www.perinataleservicesbc.ca/health-professionals/guidelines-standards/maternal](http://www.perinataleservicesbc.ca/health-professionals/guidelines-standards/maternal)

#### Provincial Council for Maternal and Child Health—Quality Based Procedures/Clinical Practice Guidelines

[www.pcmch.on.ca/health-care-providers/maternity-care/quality-based-procedures-clinical-practice-guidelines](http://www.pcmch.on.ca/health-care-providers/maternity-care/quality-based-procedures-clinical-practice-guidelines)

#### Reproductive Care Program of Nova Scotia—Clinical Practice Guidelines

<http://rcp.nshealth.ca/clinical-practice-guidelines/labour-and-birth>

#### Society of Obstetricians and Gynaecologists

[www.jogc.com/guidelines-english](http://www.jogc.com/guidelines-english)

## CULTURE

### American College of Obstetricians and Gynecologists—Cultural Awareness and Sensitivity in Women’s Health Services

[www.acog.org/About-ACOG/ACOG-Departments/Public-Health-and-Social-Issues/Cultural-Awareness-and-Sensitivity-in-Womens-Health-Care](http://www.acog.org/About-ACOG/ACOG-Departments/Public-Health-and-Social-Issues/Cultural-Awareness-and-Sensitivity-in-Womens-Health-Care)

### Best Start—Giving Birth in a New Land: A Guide for Women New to Canada and their Families

[www.beststart.org/resources/rep\\_health/newcomer/newcomer\\_guide\\_english.pdf](http://www.beststart.org/resources/rep_health/newcomer/newcomer_guide_english.pdf)

### Best Start—Giving Birth in a New Land: Strategies for Service Providers Working with Newcomers

[www.beststart.org/resources/rep\\_health/Newcomer\\_%20Guide\\_Final.pdf](http://www.beststart.org/resources/rep_health/Newcomer_%20Guide_Final.pdf)

## FAMILY-CENTRED CARE

### Champlain Maternal Newborn Regional Program—Family-Centred Care Toolkit

[www.cmnrp.ca/en/cmnrp/FamilyCentred\\_Care\\_Toolkit\\_p4692.html](http://www.cmnrp.ca/en/cmnrp/FamilyCentred_Care_Toolkit_p4692.html)

### Institute for Patient- and Family-Centered Care—Website

[www.ipfcc.org](http://www.ipfcc.org)

**Ontario Public Health Association—Informed Decision-Making for Labour & Birth**  
[http://opha.on.ca/getmedia/9657686e-55ee-4222-aaaa-3738248a3d9e/  
Informed-Decision-Making-for-Labour-and-Birth-position-paper-updated-051117.pdf.aspx](http://opha.on.ca/getmedia/9657686e-55ee-4222-aaaa-3738248a3d9e/Informed-Decision-Making-for-Labour-and-Birth-position-paper-updated-051117.pdf.aspx)

**Registered Nurses Association of Ontario—Person and Family-Centred Care**  
<http://rnao.ca/bpg/guidelines/person-and-family-centred-care>

## INDIGENOUS WOMEN AND FAMILIES

**First Nations Health Authority—Aboriginal Pregnancy Passport**  
[www.fnha.ca/wellnessContent/Wellness/AboriginalPregnancyPassport.pdf](http://www.fnha.ca/wellnessContent/Wellness/AboriginalPregnancyPassport.pdf)

**First Nations Health Authority—BC Aboriginal Birth Doula Training Manual**  
[www.fnha.ca/Documents/Bc-Aboriginal-Birth-Doula-Training-Manual.pdf](http://www.fnha.ca/Documents/Bc-Aboriginal-Birth-Doula-Training-Manual.pdf)

## LABOUR MANAGEMENT

**BC Perinatal Services—Core Competencies for Management of Labour**  
[www.perinatalservicesbc.ca/health-professionals/guidelines-standards/standards/  
core-competencies-for-management-of-labour](http://www.perinatalservicesbc.ca/health-professionals/guidelines-standards/standards/core-competencies-for-management-of-labour)

## QUALITY AND SAFETY

**Accreditation Canada, the Healthcare Insurance Reciprocal of Canada, the Canadian Medical Protective Association, and Salus Global Corporation—Obstetrics Services in Canada Advancing Quality and Strengthening Safety**  
[https://www.cmpa-acpm.ca/static-assets/pdf/research-and-policy/system-and-practice-improvement/  
Obstetrics\\_Joint\\_Report-e.pdf](https://www.cmpa-acpm.ca/static-assets/pdf/research-and-policy/system-and-practice-improvement/Obstetrics_Joint_Report-e.pdf)

## TRANSFER

**Canadian Association of Paediatric Health Centres—Competencies Profile—Interfacility Critical Care Transport of Maternal, Neonatal, and Paediatric Patients**  
[http://static.squarespace.com/static/50056474c4aa4387b4e629ea/t/505893fc24acf7cfaa55  
2d15/1347982332733/](http://static.squarespace.com/static/50056474c4aa4387b4e629ea/t/505893fc24acf7cfaa552d15/1347982332733/)

## APPENDIX B—EVIDENCE TO SUPPORT THE EFFICACY OF PAIN MANAGEMENT OPTIONS: DETAILED FINDINGS

1. **Self-help techniques:** All of these techniques have the added benefit of involvement of the woman's labour support person/people, and other family members including children, if present.
  - a. **Ambulation:** The upright position in both first and second stage does offer benefits including reduced pain in the first stage of labour, better descent of the fetal head and reduction in the duration of labour and reduced risk of assisted birth/caesarean birth, episiotomy and the need for epidural. It does not seem to be associated with increased intervention or negative effects on mothers' and babies' wellbeing.<sup>133,139</sup> However, the upright position in second stage has been associated with some increased blood loss albeit insufficient to increase the need to intervene.
  - b. **Breathing:** The history of using breathing techniques during labour to decrease pain perception is long and well-established.
  - c. **Massage:** Light soothing massage of the abdomen and firm massage of the lower spine and of the shoulders, other areas of the back and legs can provide comfort during or between contractions.<sup>261</sup>
  - d. **Water:** Use of warm water in either the shower or tub during labour has been shown to reduce the need for other forms of analgesia.<sup>262</sup>
  - e. **Relaxation:** Relaxation and yoga may have a role in reducing pain, increasing satisfaction with pain relief and reducing the rate of assisted vaginal birth.<sup>263</sup>
2. **Complementary therapies:**<sup>264</sup>
  - a. **Transcutaneous electrical nerve stimulation:** TENS therapy has had variable success in providing labour analgesia. It is believed that the women who benefit most are those who are familiar with TENS for other indications.<sup>265</sup>
  - b. **Acupuncture:** Studies of the use of acupuncture have not been recorded much in the published English language literature. A trained practitioner needs to administer the therapy, and again, the women most likely to benefit are those who have used acupuncture to treat other conditions.<sup>266</sup> A recent review found that women who have acupuncture are less likely to have epidurals and be more satisfied with their care/experience.<sup>143</sup>
  - c. **Hypnosis:** Unless a person has trained herself in self-hypnosis, hypnosis requires both a trained practitioner to administer and a susceptible subject. Little has been published on the utility of hypnosis for labour analgesia.<sup>267</sup>
  - d. **Reflexology:** Reflexology applies pressure to points on hands and feet that relate to other parts of the body, similar to acupuncture. For labour, points on the feet are used to relieve labour pain.<sup>261</sup>
  - e. **Aromatherapy:** Aromatherapy uses essential oils to help create a soothing environment that increases a sense of wellbeing.<sup>263</sup> It is recommended that the use of aromatherapy be discussed with the hospitals/birthing centres to determine if it is permitted in scent-free policies.

3. **Sterile water injections:** sterile water injections are easy to provide and the technique is easy to learn. The analgesia benefit is via the gate theory of pain whereby another noxious stimulus (sterile water creating mechanical and osmotic *irritation*) provided in the same neural pathway as that of labour pain will *occupy* the receptors/neural transmission and reduce the perception of labour pain.<sup>268</sup> The most recent Cochrane review of sterile water injections could not demonstrate any benefits for low back pain or any other labour pain.<sup>142</sup>
4. **Pharmacological options:**
  - a. **Nitrous oxide:** Nitrous oxide is a weak inhalational anesthetic agent that on its own cannot induce anesthesia. When used for labour analgesia, it is used in a 50:50 ratio with oxygen (Entonox™), which adds a significant safety margin. Studies comparing Entonox to other analgesic techniques show mixed results, with some evidence that it provides minimal analgesia.<sup>269</sup> However, some women benefit from it, and it may well be that a significant part of the analgesia is derived from the breathing technique. Side effects include dizziness and sedation, with the latter more likely seen in those women who have also received opioid analgesia. It is safe for both mother and baby as long as safety protocols are followed. These include using a scavenging system, using an appropriate mask or mouthpiece to reduce room contamination, and having only the woman hold the mask or mouthpiece to her face so that if she starts to lose consciousness, she drops the mask/mouthpiece.
  - b. **Opioids:** Opioids are typically used for early labour analgesia. However, the shorter-acting opioids, such as fentanyl and remifentanyl, can be used successfully in later stages of labour with reasonable safety margin for the woman and the fetus/newborn. Opioids only dull the pain, they cannot remove labour pain entirely.<sup>270</sup> The most significant drawbacks to opioids, outside of questionable efficacy, are the side effects. These include nausea, vomiting, sedation, pruritus and, more seriously, respiratory depression in the mother. Fetal and neonatal side effects are fetal bradycardia and loss of variability, neonatal sedation, respiratory depression and breastfeeding challenges. When opioids are given intramuscularly and therefore in a larger dose, they should be avoided within 2 hours of anticipated birth in order to reduce neonatal effects. When given intravenously, either nurse-administered or woman-controlled, the opioid can be given in second stage. However, a qualified practitioner must be available to provide neonatal resuscitation including administration of naloxone. There are a small population of women for whom opioids may be one of the only pain management techniques appropriate, for example, women who have had back surgery.
    - i. Early labour opioids: morphine (Meperidine should not be used.)
    - ii. Active labour opioids: fentanyl, remifentanyl

5. **Epidural Techniques:** Epidural analgesia (including combined spinal epidural [CSE], see next) remains the most effective form of labour analgesia. However, the physiological side effects on labour remain of concern despite modern practices that use low-dose local anesthetic solutions and woman-controlled bolus techniques. Specifically, the risks include a longer second stage and higher likelihood of an instrumented vaginal birth.<sup>126</sup> While some women plan to have an epidural as their primary choice for labour analgesia, woman without that plan should regard an epidural as an option if other available comfort measures and non-pharmacological techniques have been considered.
- a. **Standard epidural:** low-dose local anesthetic-opioid solutions in a woman-controlled technique (e.g., PCEA) with either background continuous infusion or automatic intermittent bolus provides effective analgesia with least effect on motor tone and therefore pushing power.<sup>271,272</sup> Low dose is considered to be bupivacaine at less than or equal to 0.1%, combined with fentanyl at 2 micrograms/mL.<sup>141</sup> With this epidural solution and technique, not only is ambulation preserved, but women can also urinate spontaneously. While ambulation per se has not been shown to influence mode of birth after an epidural, the upright position (which includes standing, sitting, kneeling, squatting and walking) does benefit labour outcomes and use of low-dose solutions allows women to stay upright for first and second stage. In addition, the use of low-dose solutions increases the likelihood of a spontaneous vaginal birth.<sup>133,141,273</sup>
- b. **Combined spinal epidural:** The combined spinal epidural (CSE) technique initiates epidural analgesia with a small dose of spinally administered medications—typically a small dose of opioid (fentanyl or sufentanil) and local anesthetic (bupivacaine or ropivacaine). The onset of analgesia is more rapid without causing motor block. Therefore it is an effective technique for women in advanced labour who otherwise frequently need a larger epidural initiation dose in order to become comfortable within a reasonable time-frame. Another benefit to the CSE technique is a better functioning subsequent epidural, making this the technique of choice for women with prior inadequate labour epidural analgesia. The major disadvantage to CSE is the occurrence of early fetal bradycardia, which can be dramatic. The cause is still unclear, but in many women there is associated uterine tachysystole. The bradycardia is easily treated with nitroglycerin if it does not resolve with re-positioning, and ensuring maternal blood pressure is normal.<sup>274</sup>

## APPENDIX C—SAFE SKIN-TO-SKIN CONTACT FOLLOWING A VAGINAL BIRTH<sup>275</sup>

Adapted from: *Safe skin-to-skin contact between mother and baby: Procedure and important notes*. Louise Dumas & Anne-Marie Widström, 2016.

Skin-to-skin contact should be practised under safe conditions to ensure the baby's wellbeing.

### Supervision of the newborn

Until immediate skin-to-skin contact with the mother was recognized as the best practice, a nurse supervised the newborn while the newborn was on the warmer in the birthing room or in the partner's arms while waiting for the return of the mother who had had a caesarean birth. Similar close supervision is necessary while the newborn is on the mother in the birthing room or in the operating room, but with mother and baby observed together rather than separately. HCPs are accountable to check that the newborn is breathing adequately, that skin coloration is good and that the head and chest can freely move.

### Safe skin-to-skin contact at a vaginal birth

- Before birth, inform the mother and her birth companions that her baby will be placed on her chest immediately after birth as this is the safest transition from utero.
- Make sure that the mother's gown is completely removed at birth so that her baby can stretch out its body on her chest. (Her hospital gown can be tied at the front to be able to quickly remove it when the baby is about to be born. This would also prevent the gown gathering at the mother's neck, which would affect her ability to see the baby.)
- Immediately after birth, place the baby directly

on the mother's bare chest without drying the baby first.

- Place the baby vertically between the mother's breasts after a vaginal birth. It is important to make sure that the largest part of the baby's body is flat against the mother's chest. This activates oxytocin production and facilitates the baby's breathing. Avoid laying the baby curled up on its side, which impedes optimal breathing.
- Make sure the newborn can breathe easily through its nose and mouth and that secretions move freely without suctioning its airway.
- Make sure the baby can easily lift its head and chest by itself at all times.
- Dry the baby's back and head thoroughly when the baby is on the mother's chest.
- After drying the baby, remove all wet bedding and replace these with only *1 warm and dry blanket* to avoid overheating the mother/infant dyad but to minimize evaporation from baby's skin.

HCPs can observe the baby's breathing and skin colour while the baby is on the mother's chest without disturbing the new-family intimacy.

## APPENDIX D—SAFE SKIN-TO-SKIN CONTACT FOLLOWING A CAESAREAN BIRTH WITHOUT GENERAL ANAESTHESIA<sup>276</sup>

Adapted from: *Skin-to-skin between mother and baby at caesarean section: Scientific bases and procedure*. Louise Dumas, 2016.

- Inform parents about the benefits of immediate skin-to-skin mother–newborn contact at birth, uninterrupted for at least 1 hour or until the end of the first feed.
- Explain to the mother how to proceed when her baby will be placed on her.
- Attach the mother’s gown by the front in order to be able to quickly remove it when the baby is about to be born. This also avoids the gown wrinkling at her neck and restraining her ability to see.
- After the umbilical cord is cut (but left as long as possible), the obstetrician/surgeon places the newborn in the arms of the baby’s designated HCP on a sterile blanket.
- The HCP immediately goes to the mother’s head, drying the baby’s back and head (where greater evaporation occurs) along the way.
- The caregiver places the newborn horizontally on the mother’s bare chest/breasts, so that the baby’s naked abdomen is directly on the mother’s naked skin.
- Help the baby to stretch out to allow the maximum skin-to-skin contact. This activates oxytocin production and facilitates the baby’s breathing.
- Make sure the baby can breathe easily, can move its head at all times and does not have its chin tucked in. Make sure its nose and mouth are visible at all times.
- When the baby is securely placed, dry their back and head thoroughly.
- Remove all wet or damp blankets.
- Cover baby with 1 warm, dry blanket; avoid overheating.
- Ask the woman’s support person to hold the baby’s bottom or thigh under the blanket to prevent the newborn from slipping off the mother.
- An HCP (a nurse, the anesthetist, a respiratory therapist, depending on the hospital protocol) checks the baby’s breathing, colour, responsiveness to stimulation, etc., while the baby is on the mother’s chest.

### Transfer to the recovery room or directly to the mother’s room

The newborn is placed lengthwise between mother’s breasts and the mother crosses her arms around the baby to hold the baby securely. The mother and her baby are then transferred onto the stretcher using the usual sheet sliding motion.

Alternatively, the mother’s support person can hold the baby skin-to-skin, covered with a dry blanket, while the mother is transferred to the stretcher. As soon as she is on the stretcher, support person places the baby back skin-to-skin on the mother’s chest, with an HCP’s help if necessary.

### In the recovery room

- Elevate the head of the stretcher/bed to 30 degrees or more to avoid the baby being prone.
- Position the baby on the mother to facilitate visual contact and recognition of the baby’s awakening and hunger cues by the mother.
- Make sure the baby can spontaneously lift its head at all times to facilitate optimal breathing and first sucking.
- Routinely look closely at the baby to check breathing, colour and responsiveness to stimulation.
- Make sure the baby’s nose and mouth are visible at all times.

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