Recommendations for Quality Improvement

The AMA Committee, operating under the APHP, continues to review perinatal mortality in Alberta provincially. These recommendations are in response to findings from mortality cases reviewed in 2007 and 2008.

Attached to each recommendation is related information from a practice resource. Only a portion of each practice resource is quoted, and readers are advised to refer to the full practice resource for additional information. The information provided is not intended to replace clinical judgment or clinical advice.

Recommendations in response to factors/issues identified antepartum

The following are numbered but not ranked by priority:

Recommendation	*Supporting Evidence from Practice Resource*	*Practice Resource(s)*
1. Confirm and set estimated date of birth by early ultrasound if the woman's date of last menstrual period is uncertain.	▶ *"Ultrasound in the first trimester is indicated: to date pregnancy when last menstrual period date is unknown or uncertain…" p.1* ▶ *"Crown rump length at 8 to 12 weeks is the most accurate method to date pregnancy. Accurate dating decreases the number of labour inductions for post term pregnancy and is important in cases of planned deliveries to prevent iatrogenic prematurity." p.2*	*Alberta Medical Association Toward Optimal Practice. (2007).* Guideline for the Use of Prenatal Ultrasound First Trimester, Alberta Clinical Practice Guidelines. *www.topalbertadoctors.org/cpgs/prenatal_ultrasound.html*
2. Measure and plot foetal growth, recognize and respond in a timely manner to measurements outside the normal parameters.	▶ *"Fetal growth, during pregnancy should be monitored by symphysis fundal height (SFH) measurements and confirmed by serial ultrasounds if indicated." p.8* ▶ *"When IUGR is suspected or diagnosed, ongoing teaching and support for the pregnant woman, referral to specialist, follow-up, and evaluation must be organized" p.10*	Alberta Perinatal Health Program. (2008). *Intrauterine Growth Restriction: Diagnosis and Management. Practice Resource for Health Care Providers. www.aphp.ca/pdf/IUGR%20Practice%20Resource%2005%2009.pdf*
3. Inform pregnant women about the importance of being aware of their foetus's movements, how to monitor and count their foetus's movements and the need for immediate action if there is a decrease or absence of foetal movement.	▶ *"Daily monitoring of fetal movements starting at 26 to 32 weeks should be done in all pregnancies with risk factors for adverse perinatal outcome." p.S14* ▶ *"Healthy pregnant women without risk factors for adverse perinatal outcomes should be made aware of the significance of fetal movements in the third trimester and asked to perform a fetal movement count if they perceive decreased movements." p.S14* ▶ *"Women who do not perceive six, movements in an interval of two hours require further antenatal testing and should contact their caregivers or hospital as soon as possible." p.S14*	The Society of Obstetricians and Gynaecologists. (2007). Fetal Health Surveillance: Antepartum and Intrapartum Consensus Guidelines. *Journal of Obstetrics and Gynaecology Canada*, 29 (9). *www.sogc.org/guidelines/documents/gui197CPG0709r.pdf*

Recommendation	*Supporting Evidence from Practice Resource*	*Practice Resource(s)*
4. Review and/or develop a protocol for timely interpretation of non stress test (NST). Inform women requiring NST of the need to be prepared to stay in hospital in the event that further monitoring of foetal well-being or delivery is required.	*"…3. A normal non-stress test should be classified and documented by an appropriately trained and designated individual as soon as possible (ideally within 24 hours). For atypical or abnormal non-stress tests, the nurse should inform the attending physician (or primary care provider) at the time that the classification is apparent. An abnormal non-stress test should be viewed by the attending physician (or primary care provider) and documented immediately." p.S17*	The Society of Obstetricians and Gynaecologists. (2007). Fetal Health Surveillance: Antepartum and Intrapartum Consensus Guidelines. *Journal of Obstetrics and Gynaecology Canada*, 29 (9). *www.sogc.org/guidelines/documents/gui197CPG0709r.pdf*
5. Arrange timely consultation and /or referral for specialist care for pregnant women with complex medical conditions or high-risk pregnancy.	▶ *"A pregnant woman receiving antenatal care may present with signs and symptoms and/or predisposing factors for adverse perinatal outcomes. It is essential for these pregnant women to have timely access to assessment and adequate antenatal testing and help in planning a healthy delivery, thereby preventing complications." p.251* ▶ *"A woman who has been identified as having risk factors for adverse perinatal outcomes should be seen by an obstetrician within one week of referral from primary health care providers." p.251*	Society of Obstetricians and Gynaecologists of Canada. (2009). Policy Statement on Wait Times in Obstetrics and Gynaecology. *Journal of Obstetrics and Gynaecology Canada*, 204. *www.sogc.org/guidelines/documents/gui204PS0803.pdf*
6. Identify and refer women at risk for substance use to *Alberta Alcohol and Drug Abuse Commission's Enhanced Services for Women*.	*"AADAC and its funded agencies welcome individuals referred from a variety of sources including health care professionals..."* *AADAC website*	Alberta Alcohol and Drug Abuse Commission Referrals *www.aadac.com/86_758.asp* Smoker's Helpline *www.aadac.com/186_540.asp* Smoker's Helpline Fax Referral Form *www.aphp.ca/pdf/Generic%20Fax%20Referral%20form%20Revised%2023_10_%202008_1%20_3_%20_7_[1].pdf*
7. Inform women who have had a previous cesarean birth of the significant increased risk if they consider giving birth in a setting without access to a timely Caesarean section. Before a trial of labour, obtain obstetrical consultation and be informed of the indications for the previous Caesarean section.	▶ *"For a safe labour after Caesarean section, the woman should deliver in a hospital where a timely Caesarean section is available. The woman and her health care provider must be aware of the hospital resources and the availability of obstetric, anesthetic, paediatric, and operation room staff." p.167*	Society of Obstetricians and Gynaecologists of Canada. (2005). Clinical Practice Guidelines for Vaginal Birth After Previous Caesarean Birth. *Journal of Obstetrics and Gynaecology Canada*, 105. *www.sogc.org/guidelines/public/155E-CPG-February2005.pdf*

Recommendation	Supporting Evidence from Practice Resource	Practice Resource(s)
7. *continued*	▶ *"A TOL [trial of labour] after Caesarean can be offered to women within any hospital setting where there is an ability to perform a Caesearan section… Women who live in areas where local hospitals cannot provide a timely Caesarean section should be offered the opportunity to transfer to a facility where this service is available, in order to permit a TOL after Caesarean." p.167*	Society of Obstetricians and Gynaecologists of Canada. (2005). Clinical Practice Guidelines for Vaginal Birth After Previous Caesarean Birth. *Journal of Obstetrics and Gynaecology Canada*, 105. *www.sogc.org/guidelines/public/155E-CPG-February2005.pdf*
Recommendations in response to foetal surveillance issues specific to the recognition, communication and response to atypical or abnormal foetal monitoring tracings In September 2007, the Society of Obstetricians and Gynaecologists of Canada published Fetal Health Surveillance: Antepartum and Intrapartum Consensus Guideline. The consensus guideline provides comprehensive direction for foetal health surveillance including recommended timelines for assessment and recommended clinical actions. The consensus guidelines have been provided as reference for the recommendations and the page number noted.		
8. Use digital foetal scalp stimulation or scalp blood sampling in response to atypical / abnormal foetal heart tracings.	▶ *"Digital fetal scalp stimulation is recommended in response to atypical electronic fetal heart tracings." p.S39* ▶ *"Where facilities and expertise exist, fetal scalp blood sampling for assessment of fetal acid-base status is recommended in women with "atypical/abnormal" fetal heart tracings at gestations >34 weeks when delivery is not imminent, or if digital fetal scalp stimulation does not result in an acceleratory fetal heart rate response." p.S41* Please refer to the practice resource listed for more information around circumstances for fetal scalp blood sampling.	The Society of Obstetricians and Gynaecologists. (2007). Fetal Health Surveillance: Antepartum and Intrapartum Consensus Guidelines. *Journal of Obstetrics and Gynaecology Canada*, 29 (9). *www.sogc.org/guidelines/documents/gui197 CPG0709r.pdf*
9. Continue electronic foetal heart monitoring while preparing and waiting for an emergency Caesarean section (including in the operating suite).	In response to an atypical electronic foetal monitor tracing *"continue with close ongoing fetal surveillance." p.S3*	The Society of Obstetricians and Gynaecologists. (2007). Fetal Health Surveillance: Antepartum and Intrapartum Consensus Guidelines. *Journal of Obstetrics and Gynaecology Canada*, 29 (9). *www.sogc.org/guidelines/documents/gui197 CPG0709r.pdf*
10. If there is a poor quality electronic foetal monitor tracing:	▶ *"Ensure the equipment is working properly." p.S34*	The Society of Obstetricians and Gynaecologists. (2007). Fetal Health Surveillance: Antepartum and Intrapartum Consensus Guidelines. *Journal of Obstetrics and Gynaecology Canada*, 29 (9). *www.sogc.org/guidelines/documents/gui 197CPG0709r.pdf*

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Recommendation	*Supporting Evidence from Practice Resource*	*Practice Resource(s)*
10. *continued*	▶ *"If external monitor is in use, reposition to obtain a clear continuous signal." p.S34*	The Society of Obstetricians and Gynaecologists. (2007). Fetal Health Surveillance: Antepartum and Intrapartum Consensus Guidelines. *Journal of Obstetrics and Gynaecology Canada*, 29 (9). *www.sogc.org/guidelines/documents/gui197 CPG0709r.pdf*
	Apply internal scalp electrode: ▶ *"Anticipate the need for internal monitoring if unable to maintain a technically adequate tracing despite interventions using external monitoring." p.S34* ▶ *"With internal EFM [electronic fetal monitoring], confirm presence of fetal heart sounds by auscultation and note the fetal heart rate." p.S34*	
	Confirm foetal heart rate using auscultation and check maternal pulse: ▶ *In response to foetal bradycardia "Differentiate fetal from maternal heart rate." p.S40* ▶ In response to an inadequate tracing for interpretation, *"With internal EFM, confirm presence of fetal heart sounds by auscultation and note the fetal heart rate." p.S34* ▶ *"Assess maternal pulse"* and *"Differentiate fetal from maternal heart rate"* as a clinical action in response to bradycardia or tachycardia, for example. *p.S40*	
	▶ *"Confirm uterine activity pattern and uterine resting tone by abdominal palpation." p.S34*	
11. Monitor and document timing of contractions in conjunction with the foetal heart rate to ensure accurate interpretation of the electronic foetal monitor tracing.	The steps in a systematic interpretation include ▶ *"Assess the uterine activity pattern, including frequency, duration and intensity of contraction, and uterine resting tone." p.S35* ▶ *"…allows demonstration of the relationship between contractions and fetal heart decelerations." p.S35*	The Society of Obstetricians and Gynaecologists. (2007). Fetal Health Surveillance: Antepartum and Intrapartum Consensus Guidelines. *Journal of Obstetrics and Gynaecology Canada*, 29 (9). *www.sogc.org/guidelines/documents/gui197 CPG0709r.pdf*
12. Review and/or develop protocols for emergency Caesarean section when the on-call surgical team is not available.	*"Prompt attendance to problems as well as immediate transfer protocols for high-risk cases should be adopted. A clear policy should be established and known to physicians, professional caregivers and the general public." p.1*	The Society of Obstetricians and Gynaecologists of Canada. (2006). Attendance at Labour and Delivery Guidelines for Obstetrical Care Policy Statement, *Journal of Obstetrics and Gynaecology Canada*, 89. *www.sogc.org/guidelines/public/89E-PS-May 2000.pdf*

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Recommendation	Supporting Evidence from Practice Resource	Practice Resource(s)
12. *continued*	▶ *"Emergency Caesarean sections should be performed within approximately 30 minutes." p.255* ▶ *"Urgent Caesarean section should be performed within 1 to 2 hours." p.255* ▶ *"Caesarean sections for a failed trial of forceps or for twin or breech pregnancy should be performed within approximately 30 minutes." p.255*	The Society of Obstetricians and Gynaecologists of Canada. (2008). Wait Times in Obstetrics and Gynecology Policy Statement, *Journal of Obstetrics and Gynaecology Canada*, 204. *www.sogc.org/guidelines/documents/gui204PS0803.pdf*
13. Seek a second opinion for interpretation of atypical or abnormal foetal heart rate tracings. Electronic foetal monitor tracings may be faxed to a consultant if a second opinion is needed and is not readily available in the community of practice.	*"All facilities where testing is carried out should have clearly stated, readily accessible protocols in place for interdisciplinary communication and action in the presence of an abnormal non-stress test. Such action would include the initiation of intrauterine resuscitation, consultation or communication with an obstetrician and / or MFM [maternal fetal medicine] sub-specialist, and arrangement for further testing and / or consideration of delivery and / or transport." p.S16*	The Society of Obstetricians and Gynaecologists. (2007). Fetal Health Surveillance: Antepartum and Intrapartum Consensus Guidelines. *Journal of Obstetrics and Gynaecology Canada,* 29 (9). *www.sogc.org/guidelines/documents/gui197CPG0709r.pdf*
Recommendations in response to decreasing rate of placenta pathology and autopsy rates		
14. Send all placenta and cord to pathology for stillbirths.	▶ *"This systematic approach to stillbirth is not complete without a meticulous examination of the placenta, membranes, and umbilical cord." JOGC p.542* ▶ *"The most important tests in the evaluation of a stillbirth are fetal autopsy; examination of the placenta, cord and membranes; and karyotype evaluation" ACOG p.758*	The Society of Obstetricians and Gynaecologists. (2007). Fetal Health Surveillance: Antepartum and Intrapartum Consensus Guidelines. *Journal of Obstetrics and Gynaecology Canada,* 29 (9). *www.sogc.org/guidelines/documents/gui197CPG0709r.pdf* The American College of Obstetricians and Gynecologist (ACOG). Management of stillbirth. *Obstetrics & Gynecology*. (2009). *www.acog.org*
15. Counsel parents about the benefits of autopsy; these results may assist in decisions and management of future pregnancies	*"Even though the bereaved parents may not want the information initially, health care providers should emphasize that results of the evaluation may be useful to the patient and her family in planning future pregnancies." ACOG p.752.*	The Society of Obstetricians and Gynaecologists. Stillbirth and bereavement: guidelines for investigation of stillbirths (2006). *Journal of Obstetrics and Gynaecology Canada*. *www.sogc.org/guidelines/public/178E-CPG-June2006.pdf* The American College of Obstetricians and Gynecologist (ACOG). Management of stillbirth. *Obstetrics & Gynecology*. (2009). *www.acog.org* Alberta Medical Association (2008) Stillborn Investigation Protocol *http//www.albertadoctors.org* International Stillbirth Alliance *www.stillbirthalliance.org*

Recommendation	*Supporting Evidence from Practice Resource*	*Practice Resource(s)*
16. Request consent for autopsy for maternal deaths and refer all maternal deaths to Office of the Chief Medical Examiner.	*"Request permission for a complete autopsy in all cases, even if the cause of death seems evident." AMA*	Fatality Inquiries Act Chapter/Regulation: F-9 RSA 2000 Alberta Medical Association. (2008). Stillborn Investigation Protocol *www.albertadoctors.org*
Recommendations in response to neonatal practice and system issues		
17. Offer all obstetrical and neonatal care providers opportunity to participate in newborn resuscitation training according to revised Neonatal Resuscitation Program Guidelines released in 2006.	*"At every delivery, there should be at least one person who can be immediately available to the baby as his or her only responsibility and who is capable of initiating resuscitation. Either this person or someone else who is immediately available should have the skills required to perform a complete resuscitation, including endotracheal intubation and administration of medications. It is not sufficient to have someone 'on call' (either at home or in a remote area of the hospital) for newborn resuscitations in the delivery room. When resuscitation is needed, it must be initiated without delay." p.1-16*	*Canadian Pediatric Society*. (2006). Neonatal Resuscitation Textbook. *Canadian Pediatric Society Publisher*. For textbook ordering information please see the following website: *www.cps.ca/english/publications/bookstore/NRP.htm#Textbook*
18. Newborn resuscitation equipment should be available in all hospitals providing obstetrical and neonatal services and to those responding to obstetrical emergency deliveries in accordance with the Neonatal Resuscitation Program Guidelines released in 2006.	*"All the equipment necessary for a complete resuscitation must be in the delivery room and be fully operational. When a high risk delivery is expected, appropriate equipment should be ready to use." p.1-17*	Canadian Paediatric Society. (2006). Neonatal Resuscitation Textbook. Canadian Paediatric Society Publisher. • List of Neonatal Resuscitation Supplies and Equipment. Canadian Paediatric Society. (2006). *Neonatal Resuscitation Textbook*. Canadian Paediatric Society Publisher, p.1-26. • *Canadian Addendum: Recommendations for specific treatment modifications in the Canadian context. Canadian Paediatric Society*. (2006). Neonatal Resuscitation Textbook. *Canadian Paediatric Society Publisher*, p.1-3. For textbook ordering information please see the following website: *www.cps.ca/english/publications/bookstore/NRP.htm#Textbook*

Recommendation	*Supporting Evidence from Practice Resource*	*Practice Resource(s)*
19. Initiate early consultation with a specialist and/or high-risk transport team for newborns manifesting signs of failure to adapt to extrauterine life or show signs of illness.	The ACoRN framework recommends *"consider the need for early consultation and /or transport." p.1-3*	ACoRN Neonatal Society. (2005). ACoRN: *Acute Care of At Risk Newborns Textbook*, Publisher is the ACoRN Neonatal Society, Vancouver, British Columbia. To order ACoRN Textbook, order online: For large volume orders *www.acornprogram.net* For single orders *www.bcphp.ca//sites/bcrcp/files/ACoRN/ACornOrderForm.pdf*
20. Inform health care providers and the public about prevention of sudden infant death (SIDS) and safe sleeping arrangements for newborns.	▶ *"Infants should sleep on their back, in cribs meeting the Canadian Government's safety standards (46). This is the recommended sleeping arrangement for the first year of life, under all circumstances."* ▶ *"The infant sleep environment must be free of quilts, comforters, bumper pads, pillows and pillow-like items. Dressing infants in sleepers should be considered to eliminate the need for any covers over the baby, other than a thin blanket."* ▶ *"Parents should also be aware that room-sharing is protective against SIDS and that this type of sleeping arrangement is a safer alternative to bedsharing. This may be particularly appealing to mothers who breastfeed and want their baby to be near them without sharing the same bed surface."* ▶ *"Effective counseling to prevent maternal smoking should begin at the onset of pregnancy, and ideally, well before that.* • *Mothers who smoke during their pregnancy should be informed that their infant has a greater risk of SIDS. Passive exposure to environmental tobacco smoke is also associated with an increased risk of SIDS.* • *When there is exposure to cigarette smoking, pre- or postnatally, the risk of SIDS is further increased with bedsharing."*	*Canadian Pediatric Society*. (2006). *Recommendations for safe sleeping environments for infants and children Position Statement*. *www.cps.ca/english/statements/cp/cp04-02.htm* Please refer to the complete practice resource for full recommendations for safe sleeping environments for infants and children.

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Recommendation	***Supporting Evidence from Practice Resource***	***Practice Resource(s)***
20. *continued*	▶ *"Hospitals should not allow mothers to sleep in the same bed with their newborns in view of the effects of postpartum maternal weakness or fatigue, analgesia or postanesthesia. This policy will also serve to educate parents on safe sleeping practices. However, it must not compromise in any way the maternal-infant interaction necessary for the initiation of successful breastfeeding."* ▶ *"Parents should not place infants on waterbeds, air mattresses, pillows, soft materials or loose bedding, even for temporary sleeping arrangements (e.g. during travel). Car seats and infant seat carriers must not replace the crib as a sleep surface due to the risk of the harness straps causing upper airway obstruction."* ▶ *"Sleeping with an infant, or letting the infant sleep alone on any type of couch, recliner or cushioned chair is dangerous, placing infants at substantial risk for asphyxia or suffocation. Any makeshift bed is dangerous as well."*	*Canadian Pediatric Society*. (2006). *Recommendations for safe sleeping environments for infants and children Position Statement. www.cps.ca/english/statements/cp/cp04-02.htm* Please refer to the complete practice resource for full recommendations for safe sleeping environments for infants and children.
21. Increase awareness of health care providers about the signs and symptoms of newborn illness and risk factors – including infection, failure to adapt to extrauterine life and neonatal withdrawal from maternal substance use.	*"ACoRN provides a logical and sytematic approach to gathering and organizing information, establishing priorities, and intervening appropriately for those babies who become unwell or are at risk of becoming unwell in the first few hours or days after birth." p.1-3*	ACoRN Neonatal Society. (2005). ACoRN: *Acute Care of At Risk Newborns Textbook*, Publisher is the ACoRN Neonatal Society, Vancouver, British Columbia. To order ACoRN Textbook, order online: For large volume orders *www.acornprogram.net* For single orders *www.bcphp.ca//sites/bcrcp/files/ACoRN/ACornOrderForm.pdf*
22. Inform families about signs of newborn illness and the need for prompt consultation with a health care provider.	*"Preparation for discharge should be considered part of the normal antenatal education of all expectant mothers (and families), including information on infant feeding and detection of neonatal problems such as dehydration and jaundice. This should be reinforced during the short hospital stay." p.3*	Canadian Pediatric Society. (Revision in progress 2009). Facilitating discharge home following a normal term birth Position Statement. *www.cps.ca/English/statements/FN/fn96-02.htm*

Recommendation	*Supporting Evidence from Practice Resource*	*Practice Resource(s)*
23. Review and implement protocols for determining newborn readiness for discharge.	*"With discharge from hospital begore 48 hours after birth, the guidelines in Table #1 (see practice resource) should be followed. Individual hospitals may identify more specific criteria according to the needs of their populations and regions." CPS p.3*	Society of Obstetricians and Gynaecologists of Canada. (2007). Postpartum Maternal and Newborn Discharge Policy Statement, *Journal of Obstetrics and Gynaecology Canada*, 190. *www.sogc.org/guidelines/documents/190E-PS-April2007.pdf* Canadian Pediatric Society. (Revision in progress 2009). Facilitating discharge home following a normal term birth Position Statement. *www.cps.ca/English/statements/FN/fn96-02.htm*

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