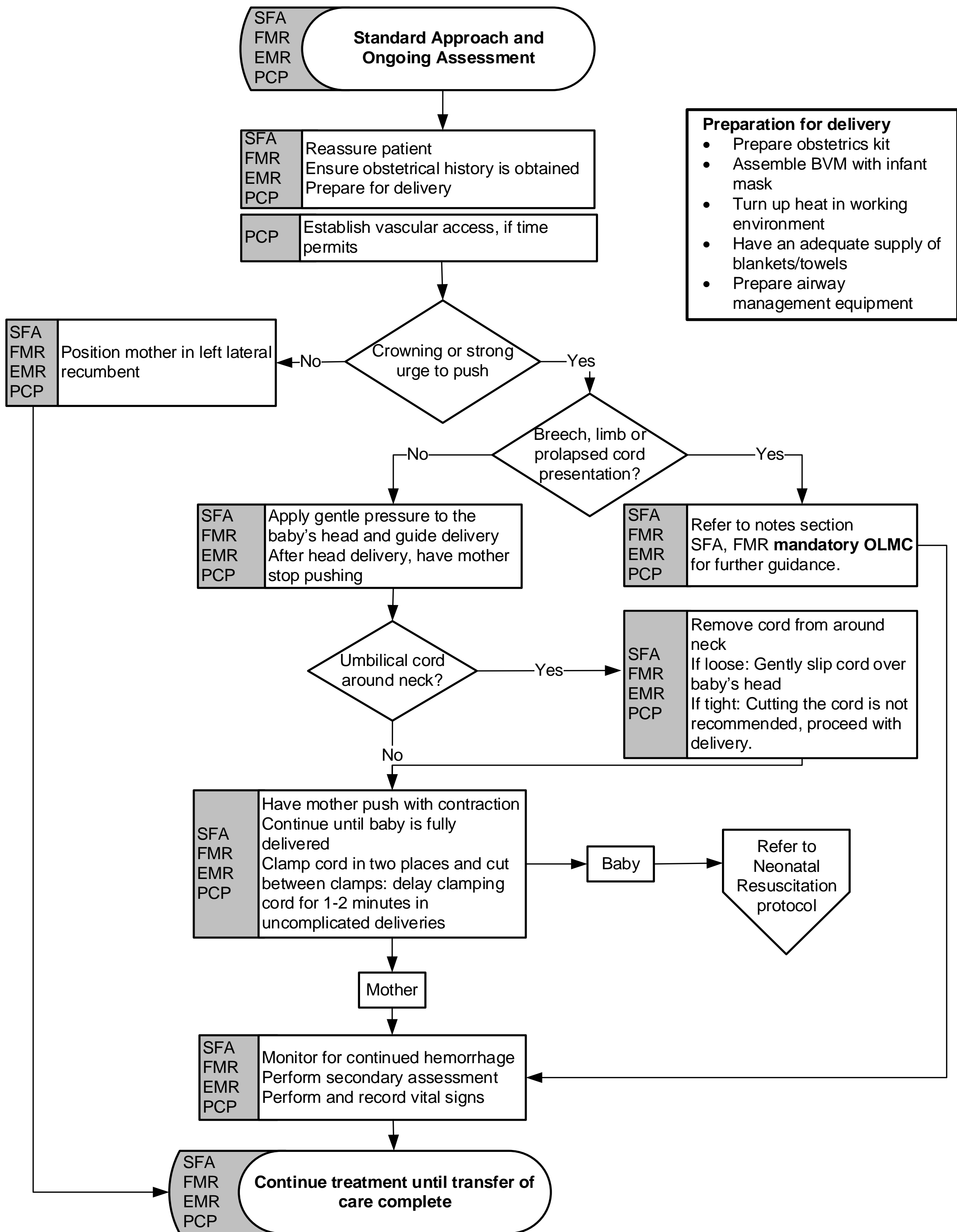
SFA
FMR
EMR
PCP
Standard Approach and Ongoing Assessment
SFA
FMR
EMR
PCP
Reassure patient
Ensure obstetrical history is obtained
Prepare for delivery
PCP
Establish vascular access, if time permits
Preparation for delivery
Prepare obstetrics kit
Assemble BVM with infant mask
Turn up heat in working environment
Have an adequate supply of blankets/towels
Prepare airway management equipment
Crowning or strong urge to push
No
Yes
SFA
FMR
EMR
PCP
Position mother in left lateral recumbent
Breech, limb or prolapsed cord presentation?
No
Yes
SFA
FMR
EMR
PCP
Apply gentle pressure to the baby's head and guide delivery
After head delivery, have mother stop pushing
SFA
FMR
EMR
PCP
Refer to notes section
SFA, FMR mandatory OLMC for further guidance.
Umbilical cord around neck?
Yes
No
SFA
FMR
EMR
PCP
Remove cord from around neck
If loose: Gently slip cord over baby's head
If tight: Cutting the cord is not recommended, proceed with delivery.
SFA
FMR
EMR
PCP
Have mother push with contraction
Continue until baby is fully delivered
Clamp cord in two places and cut between clamps: delay clamping cord for 1-2 minutes in uncomplicated deliveries
Baby
Refer to Neonatal Resuscitation protocol
Mother
SFA
FMR
EMR
PCP
Monitor for continued hemorrhage
Perform secondary assessment
Perform and record vital signs
SFA
FMR
EMR
PCP
Continue treatment until transfer of care complete

Obstetrical and gynecological assessments
The algorithm above is simplified in order to serve as a quick go-to resource while on scene. The comprehensive notes below should be reviewed in detail as part of ongoing MFR training and are supported by an in-depth training module available at www.albertamfr.ca

History questions
It is important to obtain detailed history from obstetrical and gynecological patients.
If pregnancy is not confirmed or gestational age is not known, you may have to ask different questions. When was your last period? If unknown, ask them to try and recall which month it occurred. Note that menstruating recently does not rule out potential pregnancy.

1. Have you ever been pregnant before? How many times?
2. How many times have you given birth?
3. Where there any complications with previous deliveries?
4. Did you deliver vaginally or by cesarean section?
5. Have you received prenatal care, including ultrasounds?
6. What is your due date?
7. Were previous labours slow or fast?
8. Do you have any bleeding disorders or any other medical history?

Patient dignity and special considerations
Assessing a patient with an obstetrical or gynecological emergency can be awkward or even distressing for everyone involved. It is important to make every attempt to preserve the patient's privacy and dignity. There are a few steps you can take to help reduce the discomfort the patient and bystanders may experience.

1. Limit the number of responders in immediate attendance to only those needed to deliver patient care.
2. If possible, create a visual barrier such as hanging a sheet in front of the patient to create a more private space for assessment and monitoring.
3. At these types of emergencies, it is especially important to introduce yourself. "Hi, my name is Joe, and I am a medical first responder with the fire department. I will be helping you today while we wait for EMS."
4. Designate one or two responders to perform a visual assessment of the patient's vulvar region. Ideally, this should be the practitioner or practitioners most experienced in obstetrical and gynecological assessments.
5. Obtain *ongoing* consent. Ask the patient for permission before you perform any assessment or treatment and explain why. "With your permission, I am going to lift this sheet so that I can visually assess any bleeding or whether the baby is crowning. May I do that now?" Ongoing consent means you continue to ask for consent throughout your time with the patient, without assuming that previous consent is now implied for every assessment or treatment. "I do not see any bleeding, and the baby is not crowning. However, we would like to initiate intravenous

access through an IV while we obtain your vital signs. The IV may be used later by EMS for medications, or for fluid replacement in the event you were bleeding too much. May I start an IV on you?"

6. Some cultures may be very uncomfortable with male practitioners attending to the patient. In these instances, consider designating a female practitioner to perform the visual assessments. In the event this isn't possible, do not force an assessment on the patient, or their family. Consider saying something like, "I understand your concerns. However, it's really important to know whether there is excessive bleeding or whether the baby is coming now. My only priority is the health of you and your baby. I will only look when necessary, and only for a short time. I will not be physically assessing or touching your vulva. May I take a look?"Although not common, it is possible to encounter a patient with an obstetrical or gynecological emergency that does not identify as a woman. It is important to ask these patients what pronouns they use, and to honour their gender identity. They may use a different name than is reflected on their identification, but ensure you use the name they wish to be addressed by. You can help set the tone for the incoming crew by introducing the patient during your handoff report when EMS arrives. "This is Joe, and they use them/their pronouns. They are 36 weeks pregnant and are experiencing contractions every three minutes."
7. Obtaining the pertinent history can be challenging in this setting, and patients may not feel comfortable answering questions in front of bystanders such as parental figures or partners. Creating an opportunity for bystanders to be elsewhere during history-taking may be advantageous. Look for signs that the patient may not be able to answer in front of bystanders such as speaking quietly, seeming uncomfortable or not making eye contact. Try and provide for the privacy to gather history alone with the patient, even if this requires you to ask the same questions a second time. Having a colleague ask the bystander(s) to gather medications or other supplies can provide this opportunity.

IV access and oxygen administration

In all imminent delivery situations and if time permits, initiate vascular access. Avoid antecubital veins for IV access because the patient will often bend their arms while labouring or pushing, causing the IV flow to discontinue. As with all patients, monitor oxygen saturation and treat accordingly, targeting saturations of 94-98% and administer high-flow oxygen if indicated. Oxygen saturation should be checked frequently or monitored continuously to ensure that both the mother and the fetus are adequately perfused. This is especially important when there are complications with a delivery or pregnancy.

Performing a visual examination

Often, it is necessary to briefly visually assess the patient's vulvar and perineal region such as when:

1. The patient feels fluid or wetness. It is important to know if the membranes have ruptured or if there is significant bleeding. If membranes have ruptured, note whether there appears to be any meconium (fetal feces) staining of the amniotic fluids. The amniotic fluid may appear greenish or brownish rather than a clear or pale yellow.
2. Contractions are less than five minutes apart, the patient feels the need to push, or reports a burning sensation in the vulvar and/or perineal region. When the cervix is fully dilated, the infant will descend into the birth canal (vagina). This is an indication that delivery may be imminent. You might note that the vulva appears to be very swollen or bulging. During contractions, you may be able to visualize the infant at the entrance of the vagina. Note whether you are

observing the head, a limb, or buttocks. Once the head is visible both during and between contractions, this is referred to as "crowning" and delivery is imminent.

Vaginal bleeding

Vaginal bleeding or pelvic pain is found and managed by performing a primary survey, assessing and initiating early oxygen, and treating for shock, even in the absence of obvious signs and symptoms. Pregnancy lasts approximately 40 weeks from the first day of the last menstrual period until birth and is divided into three trimesters of 13 weeks. Vaginal bleeding can occur at any time during the pregnancy and can range from spotting to passing large amounts of blood, clots, and tissue.

To determine external blood loss, the patient should be asked how many pads they have soaked over the last 30 - 60 minutes. More than three pads in 30 minutes or more than five pads in 60 minutes are indicative of a serious hemorrhage. The total number should be recorded on the PCR and the EMS crew should be informed upon their arrival. The pads should be provided to the crew to turn over to the hospital. In any type of vaginal bleeding do not under any circumstances place dressings inside the vagina. Instead, apply bulky dressings externally. Refer to the shock MCP and vaginal bleeding MCP. If delivery is not imminent, place the patient into the left lateral recumbent position.
Vaginal bleeding in the first and second trimester are usually due to ectopic pregnancy or spontaneous abortion.

Identifying possible imminent delivery

Determining how close the patient is to delivering can be challenging. In all cases, if you're immediately suspicious of a possible delivery on scene while you await the arrival of EMS, have colleagues gather supplies to be prepared while a patient assessment is being performed. The following are some indications delivery may occur.

1. Contractions are less than two minutes apart.
2. Patient feels the urge to push, or feels like they need to have a bowel movement.
3. Patient is experiencing intense pain or burning in the vulvar and/or perineal region.
4. Membranes have ruptured.
5. Vaginal bleeding and/or discharge.
6. The infant's head (or buttocks/legs) appears during contractions but is not visualized between contractions.
7. Imminent delivery is defined as the moment the head (or buttocks/legs) of the infant becomes visible at the vaginal opening and remains visible between contractions. This is known as crowning and it signifies that delivery of the baby will occur within minutes.

Preparing for imminent delivery

Begin setting up your obstetrics kit and equipment so that all tools and equipment is ready and easy to visualize and retrieve. Ensure there are adequate linens, blankets and towels, including clean linen under the patient which can be switched out and changed as necessary. If possible, use disposable yellow blankets beneath the buttocks and over the abdomen and legs. Ensure the infant BVM is out together and ready for use. If possible, increase the temperature in the room/home to help keep the infant warm once it is delivered.

Delivery – head-first (cephalic) presentation
Cephalic presentation is ideal and thankfully, at 97% prevalence, the most common infant presentation during delivery.

1. **Prepare the patient and the site for delivery**
    a. Provide privacy and prepare all equipment as detailed above.
    b. Have a colleague inform the incoming crew delivery is imminent.
    c. Explain to the patient that it is likely they will deliver at scene, and before EMS arrives. Reassure them that you are there to help them and the infant once it arrives.
    d. Encourage their partner or support person to remain present during the delivery.
2. **Deliver the head**
    a. Encourage her to push with her contractions.
    b. Maintain gentle pressure on the fetal head as well as on the perineum to prevent explosive birth. To perform this, use the palm of one hand to maintain gentle pressure on the fetal head, while using the other hand to apply pressured support to the perineal region.
    c. Once the head is delivered, instruct the patient to stop pushing (puff, puff), check for and relieve nuchal cord (cord wrapped around neck), and suction the neonate (mouth first then nostrils – “M before N”).
3. **Nuchal cord (umbilical cord around the baby’s neck)**
    a. Attempt to slip the cord over the head.
    b. If it is too tight to slip over the infant’s head, allow delivery to proceed.
    c. Only if the cord appears to be preventing delivery should cutting it be considered. In this case, clamp the cord in two places as far apart as possible and cut between the clamps. Use extreme caution. This should only be undertaken in if the cord is tight around the infant’s neck AND cord complications may be impeding delivery. Be prepared for blood.
4. **Delivering the torso**
    a. After checking the neck, instruct the patient to resume pushing with her contractions.
    b. Guide the neonate’s anterior shoulder and then its posterior shoulder. The body should quickly follow. If delivery is stalled at the shoulders, please see the “delivery complications” section below.
5. **Suction, stimulate and dry**
    a. Suction the mouth and then the nostrils (‘M’ before ‘N’).
    b. Briskly dry and cover the neonate with a silver swaddler. If the infant is at 32 weeks of gestation or greater. If less than 32 weeks, do not dry and immediately place in silver swaddler to the neck. Stimulate the infant by gently rubbing their back, trunk or extremities. In both cases, cover the infant’s head to prevent heat loss.
    c. Place the infant on the mother’s bare chest.

6. **Cut the cord**

The cord is made of tough, fibrous tissue. To cut it:

a. Ensure the cord has stopped pulsing. Allow cord to remain attached for 1-2 minutes in uncomplicated deliveries. Delayed cord clamping helps improve the newborn's blood volume.
b. Place the neonate between the mother's legs at the level of the birth canal ensuring the umbilical cord is kept straight before placing the clamps.
c. Place the first clamp on the cord 15 cm (6 inches) away from the infant.
d. Place the second clamp 5 cm (2 inches) away from the first clamp.
e. With the scalpel, cut the cord in-between the clamps. Use extreme caution and be prepared for blood.
f. If the stump is actively bleeding, hold tight, direct pressure on it. Without appropriate action, the infant could quickly bleed to death.

7. **APGAR scoring**

a. Perform APGAR scoring at one and five minutes after delivery and record results for handoff to EMS crew. Refer to Neonatal Resuscitation MCP to continue care for delivered infant. Remember that once delivery occurs, there are two patients and two PCRs will need to be completed. If resources allow, assign one team to the infant and another to tend to the mother.
b. If the infant requires resuscitation, do not delay interventions to perform the scoring.
c. Scores of 0-3 are critically low, 4-6 are fairly low and 7-10 are generally normal.

Acronym		0	1	2
Appearance	Skin colour	Blue or pale all over	Blue extremities, pink body	Pink body and pink extremities, no cyanosis
Pulse	Heart rate	Absent	Less than 100	Greater than or equal to 100
Grimace	Reflex, irritability	No response to stimulation	Grimace/feeble cry when stimulated	Cries or pulls away when stimulated
Activity	Muscle tone	None	Some flexion	Flexed arms and legs that resist extension
Respiration	Breathing	Absent	Weak, irregular, gasping	Strong cry

8. **Placenta delivery**

The placenta is typically delivered within 30 – 60 minutes. When it does, place it in the plastic bag provided in the OB kit, and give it to EMS. The placenta must be evaluated in the hospital. Once delivered, have a look at both sides of the placenta to examine it for missing pieces or chunks. If there are missing pieces, there is a greater risk of post-partum hemorrhage. Please see the Vaginal Bleeding MCP for post-partum hemorrhage control.

Estimating gestational age, post-delivery.
Estimating gestational age and fetal viability is difficult in the field. The age of viability is generally considered to be as early as 20 weeks but is more commonly considered to be 22 weeks. A Stanford University study analyzed statistics of preterm deliveries occurring between 2013 and 2018 and found that 28% of neonates born at 22 weeks of gestation survived, and 55% of infants born at 23 weeks gestation survived. However, it is important to note that positive outcomes are associated with in-hospital delivery with neonatal intensive care units.

Preterm neonates less than 20 -22 weeks old will deliver with a heartbeat approximately 30% of the time, but show no other signs of life, such as breathing or crying. Often, preterm infants die in utero and are delivered after. It is not uncommon for stillborn neonates to be demonstrating signs of decomposition.
Incorporating the mother and loved ones into the discussion may be appropriate, depending on the circumstances and timing.

When in doubt, assume the fetus is potentially viable and refer to the Neonatal Resuscitation MCP. Consider accessing On-Line Medical Consultation for assistance, particularly if there is doubt as to fetal viability related to gestational age. In short, there are no easy answers and fetal development can vary considerably, particularly if there are multiples, poor nutrition or inadequate prenatal care involved.

Delivery complications
While most deliveries proceed normally, the medical first responder must be prepared for complications. Childbirth calls are one of the most stressful to attend, and when complications occur it can feel overwhelming. In all instances, remain calm and continue to support the patient with compassion and empathy. Reassure them you are trained. If resources and time allow, call On-Line Medical Consultation as soon as you encounter difficulties and endeavor to update the incoming crews with status updates.

Shoulder dystocia
Shoulder dystocia is when one or both of the infant’s shoulder’s become stuck in the mother’s pelvis during labour and delivery.

Recognition

1. Usually as labour progresses the head will continue to advance with each contraction. In shoulder dystocia, the head will not continue to protrude, and it may even retract. Sometimes the head will be delivered, but the shoulders and torso do not advance.
2. As labour becomes prolonged, you may notice the formation of a caput succedaneum, or scalp swelling of the infant, that increases in size as time goes on.
3. Shoulder dystocia will not typically spontaneously resolve on its own.

Treatment

1. Contact OLMC for guidance.
2. Try not to cut a nuchal cord accompanied by shoulder dystocia.

3. Perform McRoberts Maneuver with two responders by helping flex the patient's thighs toward her abdomen by lifting the buttocks and gently moving the legs to fold in against the patient's abdomen/chest. This works by rotating the pelvis and may open the sacrum releasing the infant's shoulder(s). If this position is too difficult for the patient, try to have the patient sit up with legs bent, or attempt a squatting position.
4. EMR, PCP and ACPs ONLY - The McRoberts maneuver is reported to be effective approximately 40% of the time when used, but applying suprapubic pressure can increase the success rate to 90%. To perform, apply downward pressure to the area immediately above the pubic bone.
5. Deliver anterior then posterior shoulder. If these maneuvers do not work, contact OLMC if they are not already providing guidance.

Breech presentation

1. Have an assistant apply supra-pubic pressure to maintain flexion of the fetal head.
2. Allow baby's buttocks to deliver first.
3. After buttocks and legs are free, support body on your forearm.
4. Check for umbilical cord around neck and slip it over the infant's head.
5. Gently deliver cord.
6. Turn infant's body to the side and gently deliver the arms.
7. After arms are free, rotate baby face down.
8. EMR, PCP, ACPs ONLY - If no progression in delivery within 2-3 minutes, placed gloved hand into vagina in a "V" formation and push the vaginal wall away from the infant's face. Call OLMC if they aren't already on the line. Maintain infant's airway inside the vagina for as long as necessary. SFA and FMR mandatory OLMC to receive further guidance.
9. Continue with delivery.

Limb presentation

Delivery is not attempted in the field because a caesarean is usually required. Ensure the presenting limb is NOT touched as it may stimulate the fetus to gasp, risking aspiration of amniotic fluid. Do not pull on the arm or leg or attempt to push it back into the vagina.

1. Place mother on hands and knees while awaiting EMS crew arrival.
2. Direct mother to pant through contractions but NOT to push.
3. Call OLMC.

Prolapsed umbilical cord

1. A prolapsed umbilical cord is an obstetrical emergency during pregnancy or labour that imminently endangers the life of the baby. The umbilical cord presents through the vagina before any part of the baby and this causes the cord to be compressed between the baby and the pelvis, obstructing fetal circulation. Without intervention, fetal death occurs quickly. If the infant is delivered, anticipate substantial neonatal resuscitation.

2. Place mother on hands and knees while awaiting EMS crew arrival.
3. EMR, PCP, ACPs ONLY - In the event of imminent delivery, delegate one practitioner to raise fetus off the umbilical cord by using a gloved hand. Maintain this as long as necessary and through delivery if it proceeds. SFA and FMR mandatory OLMC to receive further guidance.
4. Avoid alternating practitioners to avoid inducing vasospasm of the cord.
5. Do not pull on cord.
6. Do not attempt to push the cord back into the vagina.
7. Coach the patient not to push during contractions.
8. If delivery appears to be progressing, keep the patient in the hands-and-knees position and help facilitate delivery.
9. EMR, PCP, ACPs ONLY - Continue to support the infant's weight as delivery proceeds to keep it from compressing the cord. SFA and FMR mandatory OLMC to receive further guidance.
10. Contact OLMC if they aren't already engaged.

Infection Prevention and Control (IP&C) Considerations

- Consider removing turnout gear or not donning turnout gear for childbirth and obstetrical emergencies. Turnout gear may have surface contamination, and additionally may be difficult to clean after a delivery. Street clothes and a gown is preferable to turnout gear if medical jumpsuits are not available to the medical first responder.
- Wear a procedural/surgical mask and safety glasses or face shield.
- Wear sterile gloves.
- Wear a gown.
- Remove sterile items from packaging just prior to use.
- Use aseptic technique during invasive procedures such as suctioning, cutting the umbilical cord, obtaining IV access.

Working with midwives

Midwives are experts in their fields, are highly skilled and highly specialized. Approach any call where a midwife is present collaboratively, recognizing the training and expertise midwifery offers. Midwives offer complete primary care for the pregnant patient and will remain the primary caregiver on scene, but will collaboratively support, coach and direct first medical responders on scene.

What to expect when EMS arrives

If a delivery has occurred without complications, include the APGAR scores and placenta (if delivered) in your report to the incoming EMS crew. They will likely want to check the mother for bleeding, and will likely administer an intramuscular shot of oxytocin to help the patient's uterus begin contracting, which prevents excessive bleeding.

If there were complications, the incoming crew may ask you for pertinent history or they may ask the patient some of the same questions you had already asked. Be ready to help carry or assist the patient in moving to the stretcher or ambulance. If OLMC is already engaged, don't hang up when EMS arrives as the physician may want to speak to the crew or vice versa. If the patient has a bag packed and ready for the hospital, it may be helpful to ensure it gets brought to the ambulance.

If preparing the ambulance to receive the patient and infant, turn up the heat in the patient compartment in advance taking care to close all doors to keep the heat in before the patient is loaded.

What to expect at an obstetrics call

Just like being at a death, every obstetrics call is different and many different emotions and expression of those emotions can take place. The most important thing to remember is that you are there to support the patient – and sometimes this means taking care of two patients once an infant is delivered. Patient and family centred care puts the patient and their loved ones at the centre of every decision and they become an active part of the treatment plan.

At an imminent delivery, you can expect fear, anxiety and excitement and any reaction in-between. Patients may be calm or even seem detached while others may be very loud and present while labouring and delivering. If the cause of the call is due to the unexpected or the planned loss of a pregnancy, you may encounter grief, anger or relief. Be prepared to adapt to the environment you are working in, despite any personal feelings you may be feeling.

If you've never been present at a birth before, it can be overwhelming or for some, even shocking. Bodily fluids and associated sights and smells are common and all very normal. It is a privilege to be present for any emergency, emergency deliveries can be some of the most rewarding. One way to prepare for an obstetrical emergency by watching videos depicting childbirth and by talking to the women in your life about their unique experiences.

Negative outcomes can difficult for the responder to cope with. If struggling with this type of call, please reach out to department resources, or to Alberta 2-1-1 for immediate help by calling 2-1-1, or by visiting www.ab.211.ca.