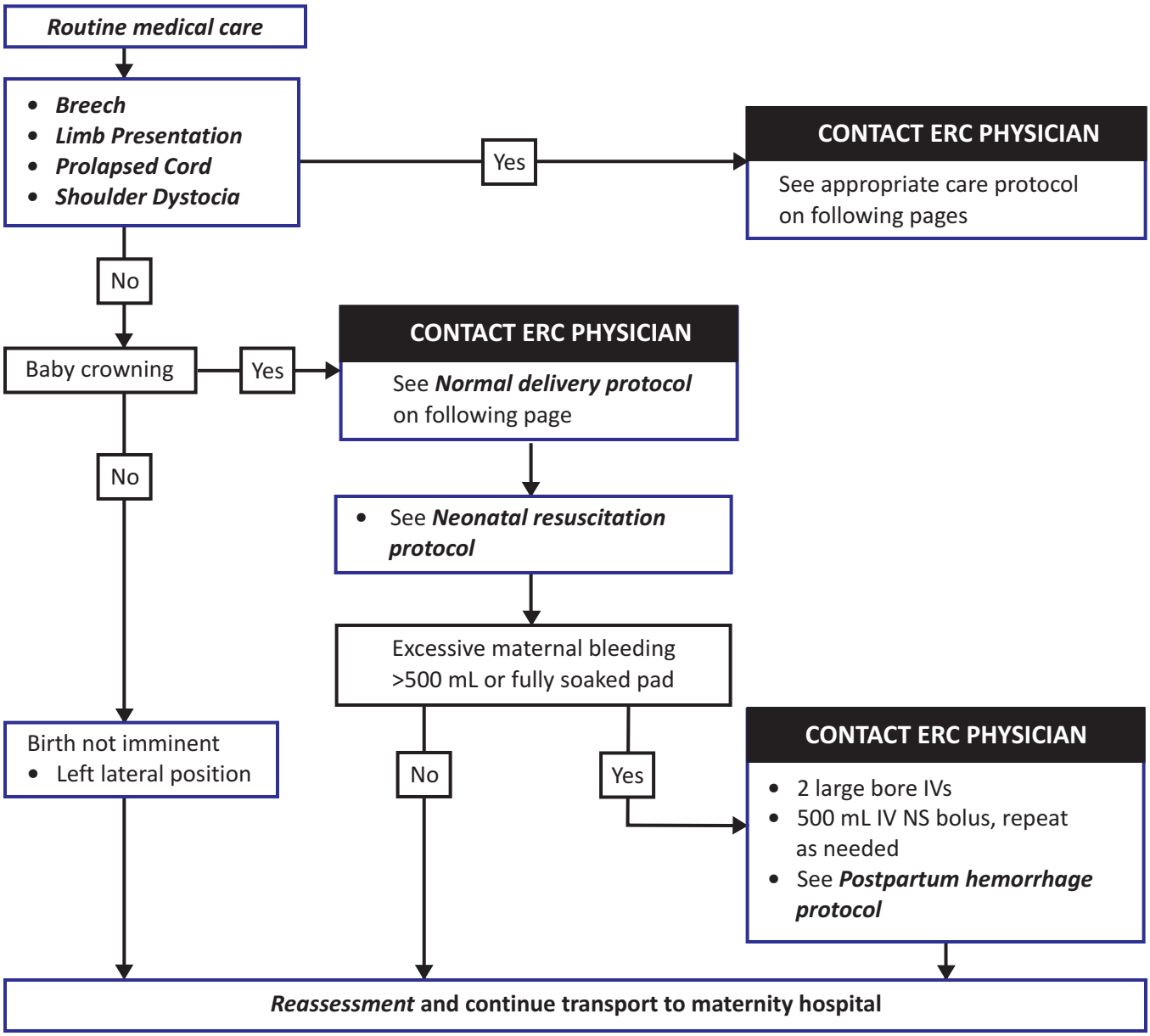
CHILDBIRTH (Uncomplicated/Complicated)

Key points

- Symptoms: Abdominal/back pain, vaginal bleeding/gush of fluid, minutes between contractions
- History of current pregnancy: Antepartum care, estimated gestational age, complications
- OB history: Number of pregnancies and c-sections, prior complications during pregnancy
- Physical exam: Inspecting external vaginal area for crowning/presenting part if patient feels like she wants to push or if she feels there is something protruding from her vagina
- *DO NOT* pull/push baby

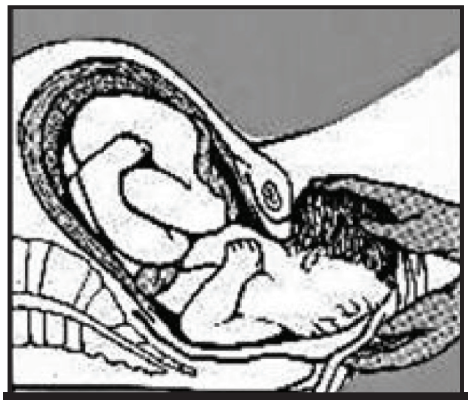
Serious signs and symptoms

- Part other than head presenting from vagina (arm, leg, umbilical cord)
- Excessive maternal bleeding
- Prolonged contractions (>6 contractions in 10 minutes or duration >2 minutes)
- Shortness of breath
- Altered mental status

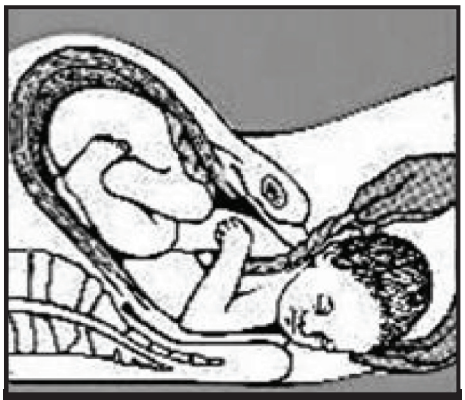


Normal Delivery

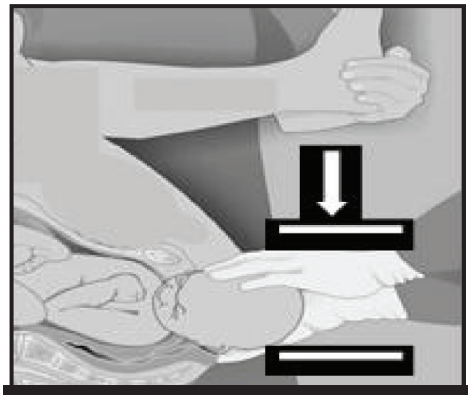
- Position patient
- Prepare OB kit
- As head delivers, suction with bulb syringe (only if not spontaneously breathing)
- Check for cord wrapped around neck
- If cord around neck, slip over shoulders/head of baby
  - If unable to unwrap cord, place umbilical clamps 5 cm apart and cut cord between clamps
- Support head, deliver body
- Place baby next to mother; dry baby and keep warm (see ***Neonatal resuscitation protocol***)
- See ***Post delivery care*** on last page



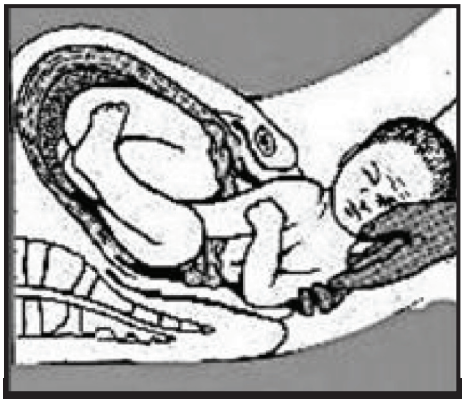
Step 1: Support head and let head turn to side to align with body



Step 2: Check for cord and slip over head if present



Step 3: Keeping hands parallel to floor, apply downward pressure to deliver shoulder



Step 4: Support body and place next to mother

Shoulder Dystocia

Definition

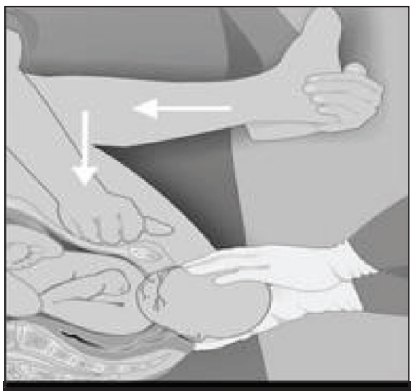
- Inability to deliver either shoulder within 60 seconds of delivery of head

Key points

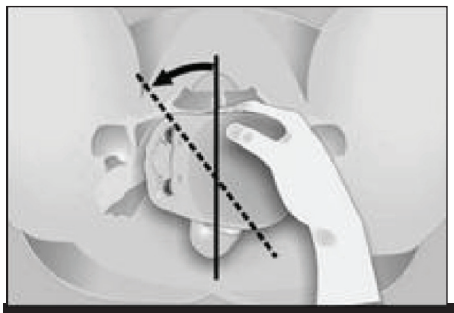
- Complications
  - Severe hypoxia, traumatic brachial plexus injuries and humerus/clavicle fractures
- *Turtle sign:* when fetal head moves back into the mother's perineum
- ***HELPERR (HeLP-R*** for BLSO provider denoted by *below) mnemonic can assist with recall of correct actions

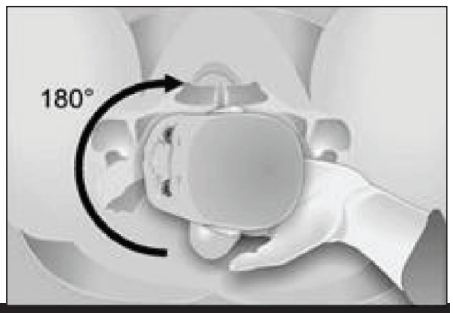
Prehospital management options

- H: Call for **H**elp*
- E: Consider **E**pisiotomy (only if additional space needed for hands to complete maneuvers below)
- L: Position **L**egs, pull knees to chest*
- P: Suprapubic **P**ressure (not fundal)*
- E: **E**nter vagina with hands to push on posterior aspect of anterior shoulder and other maneuvers
- R: **R**oll patient to knee to chest position, then deliver the posterior shoulder*
- R: **R**emove the arm, sweep posterior arm across chest

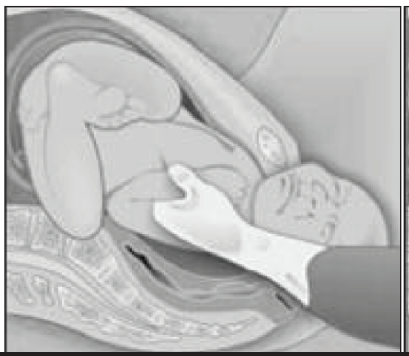


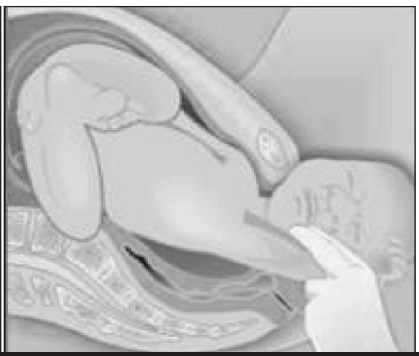
Legs: Pull knees up
Pressure: Push down in suprapubic area (not fundal)



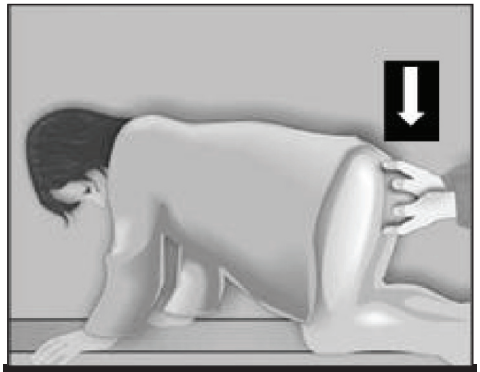


Enter maneuvers:
1) Push anterior shoulder forward
2) Pressure: Push anterior shoulder backward and posterior shoulder forward





Remove posterior arm by bending at elbow and sweeping across chest and out



Roll on to knee chest position and deliver posterior shoulder first by gentle downward pressure on fetal head

Breech Presentation

Definition

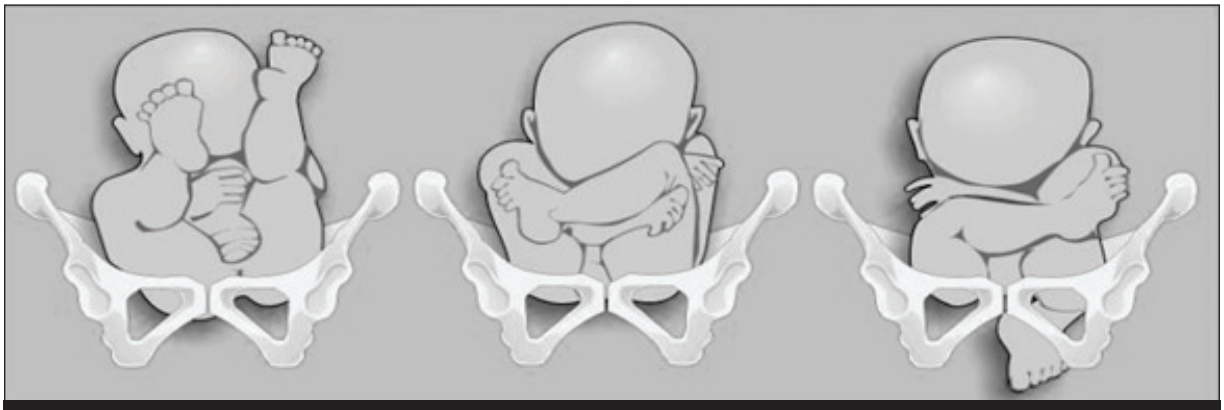
- When buttocks (or legs) deliver first

Key points

- Transport immediately
- *AVOID* delivery in ambulance if possible. Tell patient not to push.

Prehospital management options

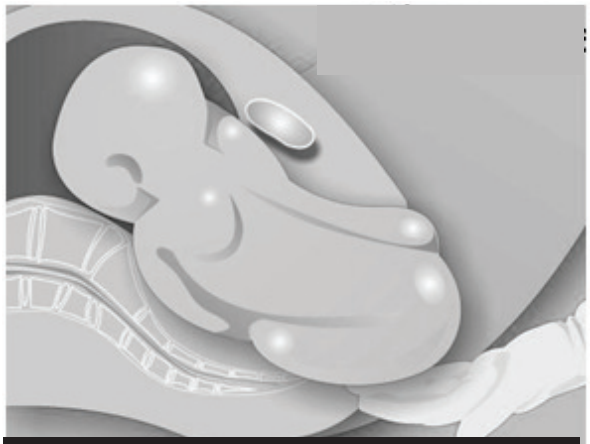
- Determine if buttocks or limb is presenting first
  - If limb (leg or arm) is presenting first, see ***Limb presentation*** section on the following page
- Delivery of breech presentation
  - Step 1
    - Support baby and allow delivery to proceed passively until base of umbilical cord is seen
    - *DO NOT* pull baby
  - Step 2
    - Grab the bony pelvis and femurs and apply gentle traction
    - *DO NOT* grab the abdomen as you may injure abdominal organs
  - Step 3
    - Once the wing-like scapulae are visible, rotate the fetus until a shoulder is anterior and deliver the arm. Rotate 180 degrees and deliver the other arm. Position the fetus so that the back is facing anteriorly.
  - Step 4
    - Anteriorly place a gloved middle finger on the fetus's occiput. The index and ring finger rest on the shoulders. Place a hand posteriorly sliding the index and middle finger into a V shape along the baby's face. Gently place pressure on the cheek bones.
    - Performing these maneuvers at the same time causes the fetal head to flex.
    - Additionally, one assistant can apply suprapubic pressure to help with flexion of the head. Another assistant can support the body.
  - See ***Post delivery care*** section on last page



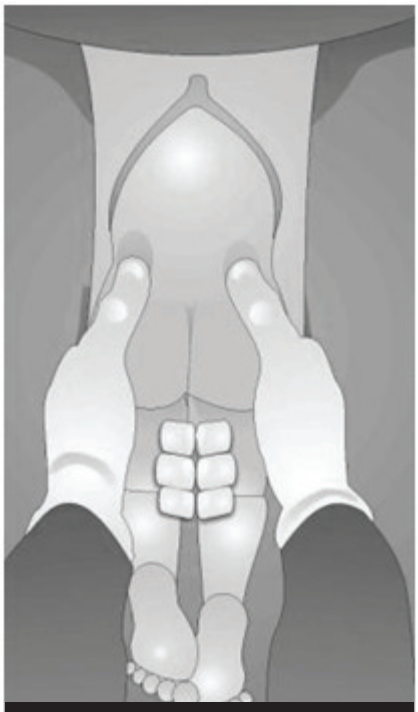
Frank breech | Complete breech | Footling breech

Presentation is the part of the fetus that is coming out of birth canal first

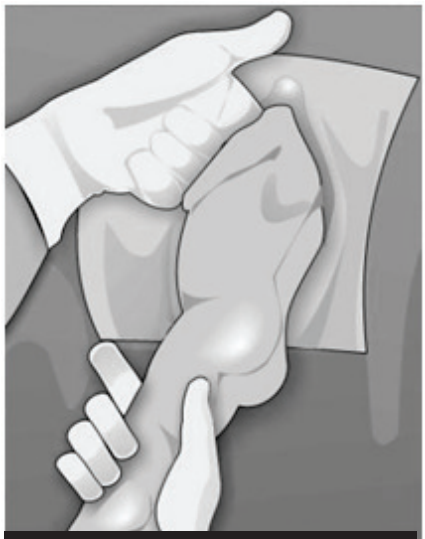
Delivery Steps for Breech Presentation



Step 1: Support the body



Step 2: Gentle traction on bony pelvis



Step 3: Rotate each shoulder anteriorly and deliver arms

Step 4: Flex the fetal head by placing the middle finger on the occiput and the other middle and index finger on the cheek bones

Cord Presentation (Prolapsed Cord)

Definition

- Umbilical cord presents/is seen before the head or other part of the baby

Key points

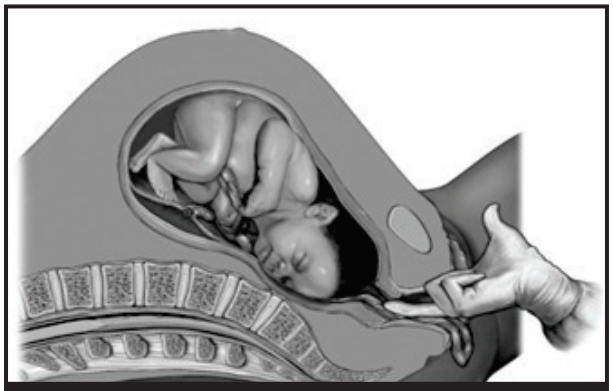
- If the umbilical cord is compressed, blood flow and oxygen don't reach the baby
- Transport immediately and try to avoid delivery in the ambulance
- Tell the patient *NOT* to push

Prehospital management options

- With two fingers of your gloved hand, gently push the presenting part of baby (not the cord) back up into the vagina until the presenting part no longer presses on the cord
  - *DO NOT* remove your hand (after elevating the presenting part of the baby) until arriving at the hospital and being relieved by other hospital personnel
- With your other hand, palpate the cord and feel the fetal HR. If <110 bpm, consider rolling the patient over and placing her in the *knee-chest position.* This may relieve pressure on the cord.

Prolonged transport or in hospital management options

- Place a Foley (urinary) catheter in the bladder and fill with 500 mL of NS. Clamp the Foley.
- Wrap the cord loosely with a moist, warm dressing



Once prolapsed cord is seen, push the presenting part (not the cord) gently back up

Knee chest position

Limb Presentation

Definition

- When one limb of the baby delivers first

Key points

- Nearly all of these patients will require delivery by caesarean-section
- Transport immediately. Avoid delivery in the ambulance if possible.
- Tell the patient *NOT* to push.

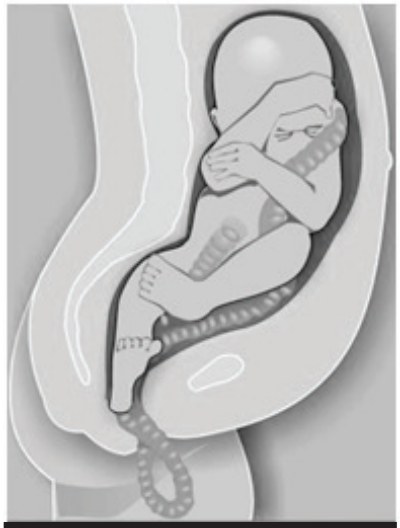
Prehospital management options

- Oxygen
- *DO NOT* attempt to deliver the baby
- *DO NOT* pull on the presenting limb
- *DO NOT* place your hand into the vagina unless there is a prolapsed cord (see ***Cord presentation*** section on previous page)

Multiple Births

Key points

- Usually both babies are born before the first placenta is delivered
- In order to prevent bleeding from the 2nd twin, carefully inspect the cord and apply a second clamp if leaking blood (oozing)
- Contractions usually restart within 5-10 minutes after the first baby is born; the second baby usually delivers within 30-45 minutes of the first baby



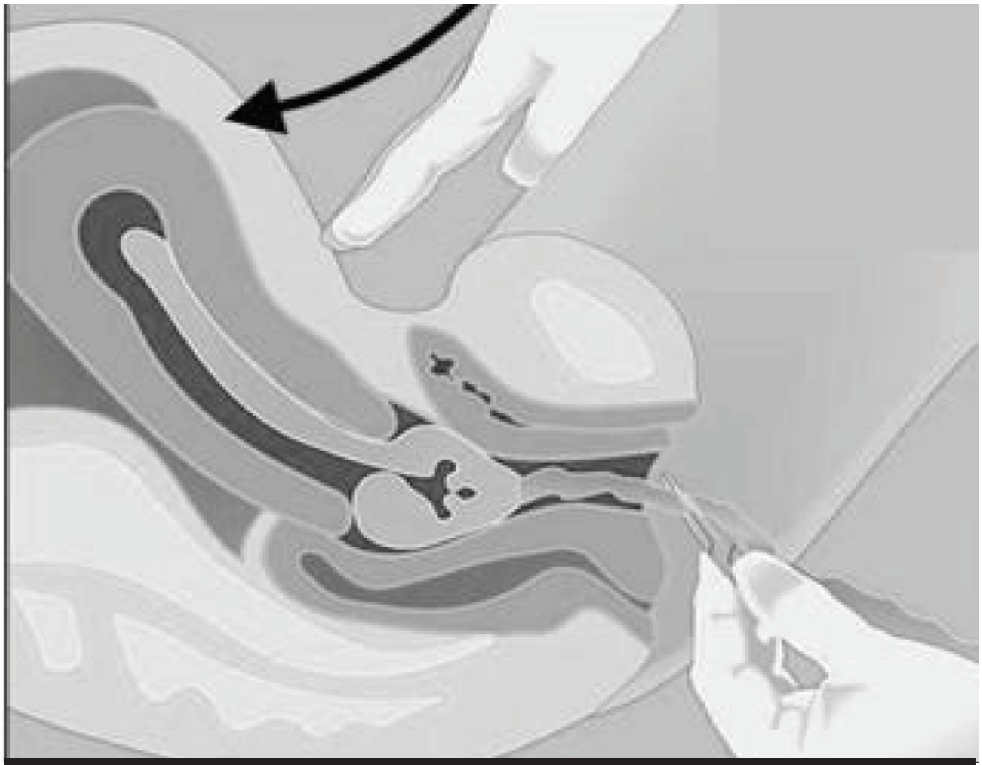
Limb presentation with prolapsed umbilical cord

Twin gestations may present with the fetuses lying in multiple positions

Post Delivery Care

Active management of 3rd stage of labor (following delivery of all fetuses)

- See ***Neonatal resuscitation protocol***
- **Oxytocin 10 Units IM** to mother immediately following delivery
  - Consider multiple fetuses and do not give until all babies are delivered
- Record time of birth
- Assess APGAR scores at 1 and 5 min after birth
- Wait until cord pulsations have stopped or 5 minutes have passed. Then, place two clamps on the cord at least 4-10 cm from the baby and cut between the clamps.
- Gently pull on the umbilical cord while providing suprapubic pressure (see below)
- Once the placenta delivers, place the placenta in a bag and give it to hospital staff
- Externally massage the uterus
- If significant ongoing bleeding or signs of maternal shock, see ***Postpartum hemorrhage protocol***



Placenta delivery: Gently pull on cord while applying pressure to suprapubic area

References

- Advanced Life Support in Obstetrics (ALSO) Provider Course Syllabus Fourth Edition, Copyright 2009, American Academy of Family Physicians

POSTPARTUM HEMORRHAGE (PPH)

Definition

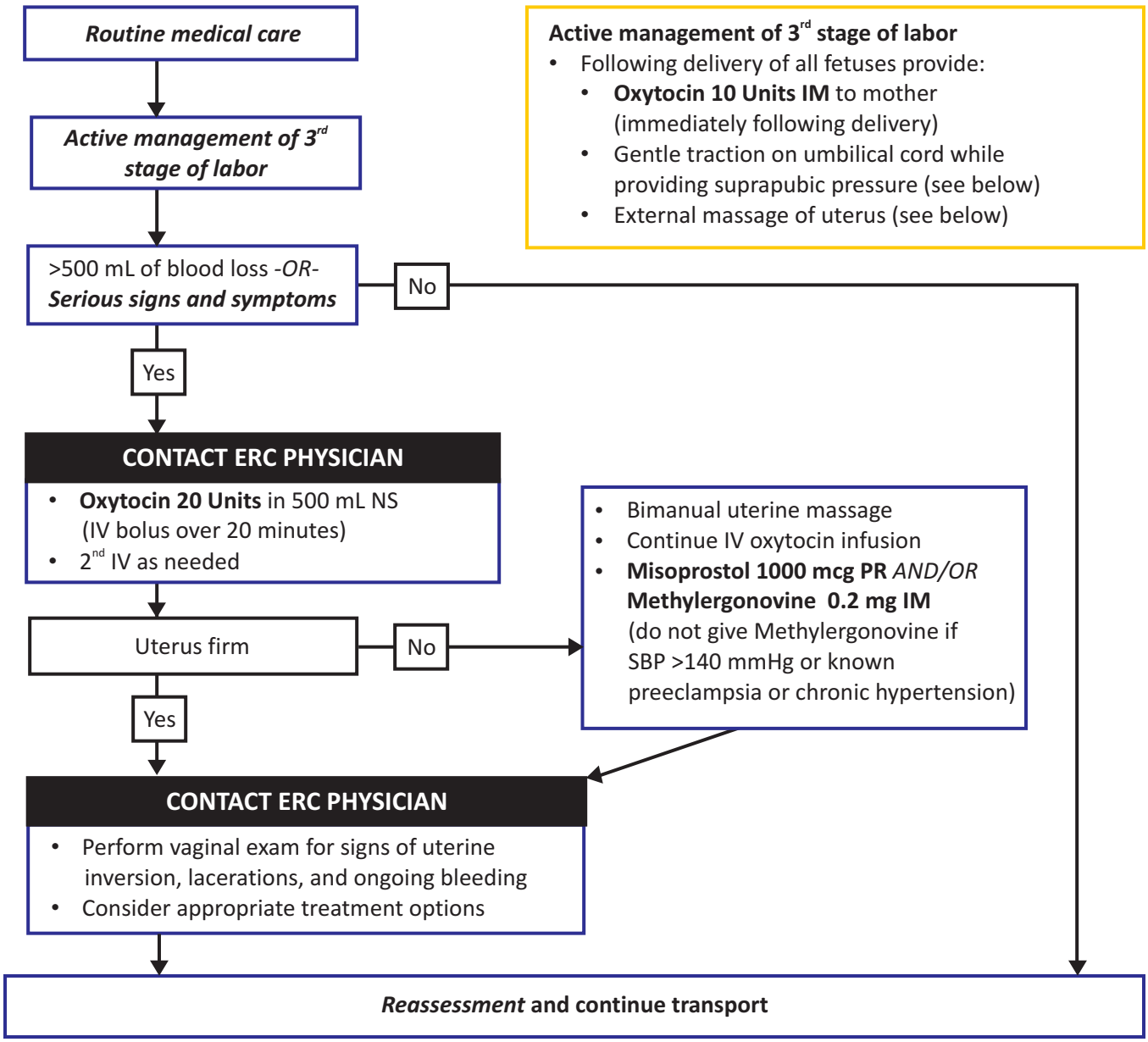
- Greater than 500 mL of blood loss following delivery
- Severe PPH is >1000 mL of blood loss following delivery

Key points

- Most common cause of maternal death in developing nations
- Active management of the third stage of labor can prevent 60% of PPH
- Rapidly evaluate for and correct possible causes
- Uterine atony (soft, boggy uterus) is the most common cause of PPH

Serious signs and symptoms

- SBP <90
- HR >100
- Shortness of breath (RR >30)
- Altered mental status
- Cool or moist skin



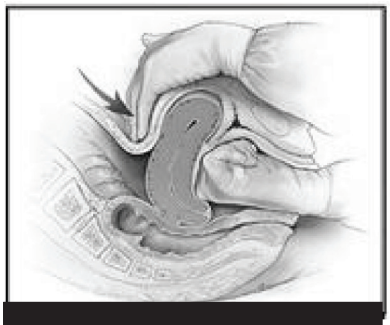
Active management of 3rd stage of labor

- Following delivery of all fetuses provide:
  - **Oxytocin 10 Units IM** to mother (immediately following delivery)
  - Gentle traction on umbilical cord while providing suprapubic pressure (see below)
  - External massage of uterus (see below)

Key points

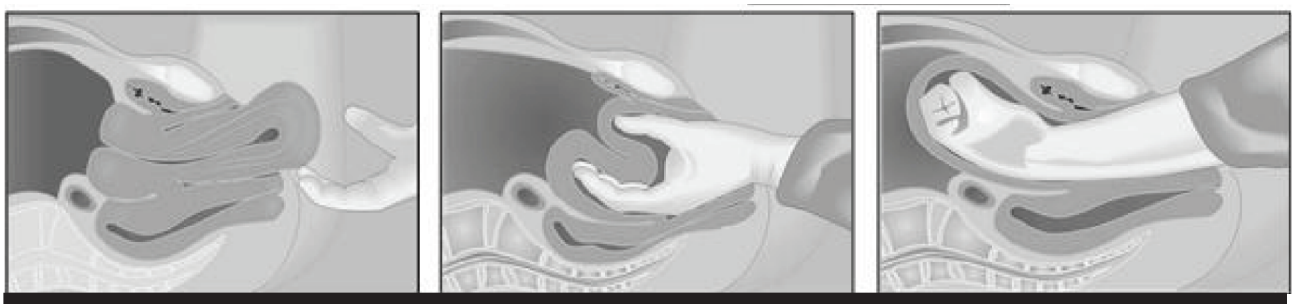
- Decisions on management options should be based on the expected time to hospital arrival

4 T's	Causes	Prehospital treatment
Tone	Decreased uterine tone	1. Uterine massage 2. Oxytocin 3. Misoprostol 4. Methylergonovine
Trauma	1. Cervical/perineal lacerations 2. Uterine inversion	1. Apply direct pressure 2. Restore uterus (see below)
Tissue	Placenta retained	Manual removal
Thrombin	Decreased clotting	Supportive measures



Bimanual uterine massage

Placental tissue removal



Inversion and restoration of uterus

References

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PREECLAMPSIA/ECLAMPSIA

Key points

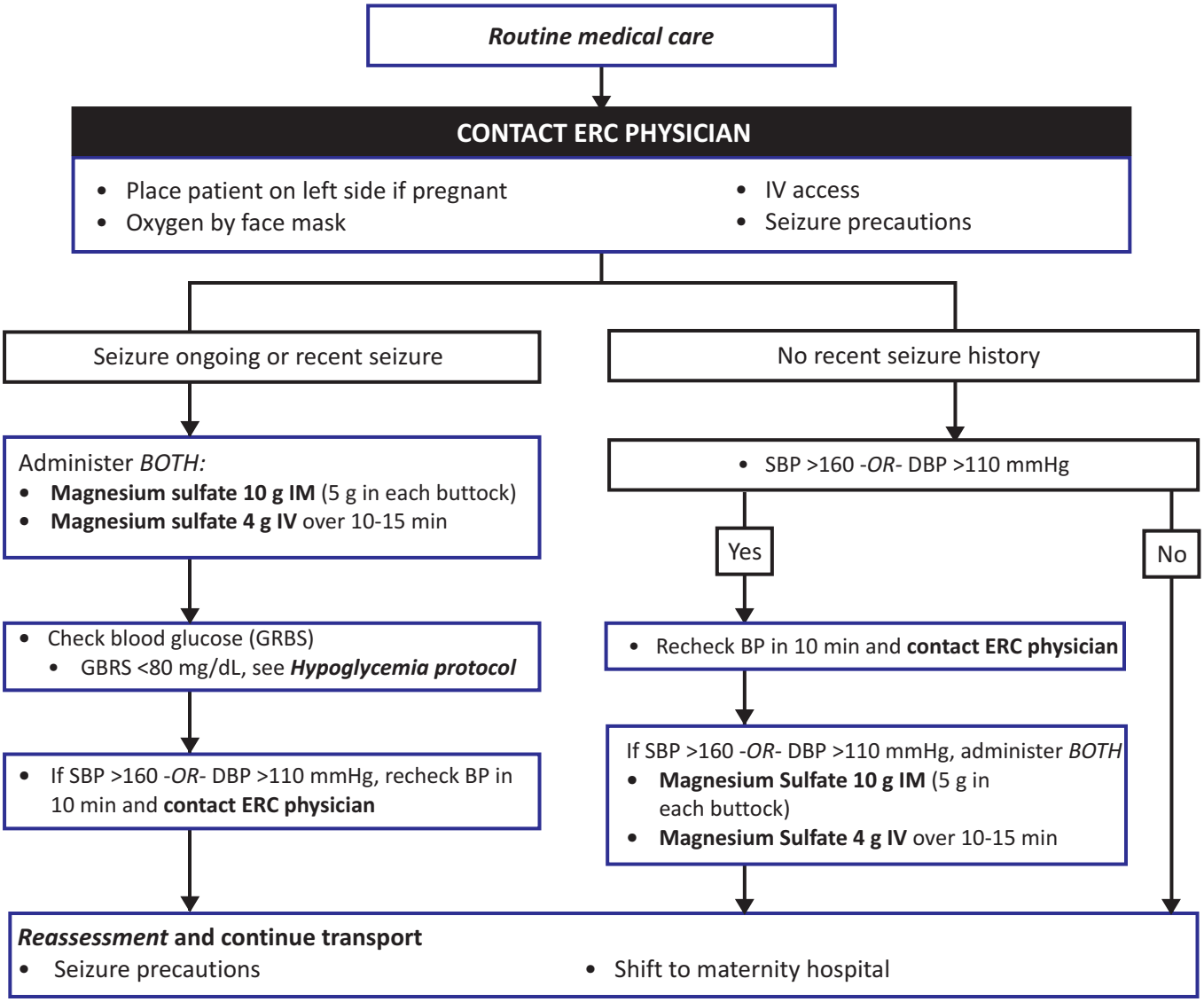
- Preeclampsia and eclampsia can occur from the 20th week of pregnancy until 6 weeks after delivery
- Preeclampsia is a BP >140/90 on >2 readings >6 hours apart *AND* significant protein in the urine
- Severe preeclampsia signs/symptoms include altered mental status, blurred vision and persistent headache
- Eclampsia is preeclampsia with seizures
- Obtain past medical history: medications, last menstrual period, gestational age (trimester)
- Magnesium toxicity manifests as loss of deep tendon reflexes and respiratory depression

Differential diagnosis

- Epilepsy
- Trauma/head injury
- Toxins/poisoning/overdose
- Hypoglycemia
- Alcohol withdrawal
- Chronic hypertension

Serious signs and symptoms

- Hypoxia/cyanosis
- Seizures
- Altered mental status
- Shortness of breath



ERC Physician

Key points

- The definitive treatment for eclampsia is delivery
- Magnesium should not be used to control hypertension
- Epigastric pain may be a sign of severe preeclampsia (also consider gallbladder disease)

Prehospital management options

- If repeat seizure occurs more than 10 minutes after the initial IV loading dose of magnesium, administer **Magnesium sulfate 2 g IV** over 10-15 minutes
- Respiratory depression may occur with magnesium toxicity
  - **Calcium gluconate 1 g IV** can be given for significant respiratory depression

Prolonged transport or in hospital management options

- If the patient continues to seize after repeat magnesium administration, consider **Midazolam 2-4 mg IV/IM**; may repeat x 1 for ongoing seizure
  - Alternate medications:
    - **Diazepam 5 mg IV/IM**; may repeat x 1 for ongoing seizure
- Antihypertensive medications
  - Treat persistent SBP >160 or DBP >110 mmHg (Goal: SBP <160 and DBP <110 mmHg)
    - **Nifedipine 20 mg PO** *(DO NOT* give sublingual)
      - **Nifedipine 10 mg PO** may be repeated every 30 min to a max of 40 mg
    - Alternate medications:
      - **Labetalol 10 mg IV**
        - If BP remains elevated above goal after 10 min, then administer **Labetalol 20 mg IV** every 10 minutes as needed to a max of 110 mg
      - **Labetalol 200 mg PO**
        - If BP remains elevated above goal after 30 min, then administer **Labetalol 200 mg PO** x 1 additional dose

How to mix and infuse Magnesium sulfate

- **Magnesium sulfate 4 g**: Mix 4 ampules of 50% $MgSO_4$ (1 g/ampule) in 100 mL NS
  - Infuse over 10 minutes, 100-150 drops per minute
- **Magnesium sulfate 2 g**: Mix 2 ampules of 50% $MgSO_4$ (1 g/ampule) in 100 mL NS
  - Infuse over 10 minutes, 100-150 drops per minute

Monitor the patients' vital signs, oxygen saturation, deep tendon reflexes, and level of consciousness every 15 minutes for the first hour, and every 30 minutes for the second hour.

Assess for signs of *magnesium toxicity* (e.g., visual changes, somnolence, flushing, muscle paralysis, loss of patellar reflexes) or pulmonary edema.

References

- Advanced Life Support in Obstetrics (ALSO) Provider Course Syllabus Fourth Edition, Copyright 2009, American Academy of Family Physicians