**Uncomplicated Delivery**

- Reassure mom, develop partnership
- Ask mom to push with contractions, rest in between
- Apply gentle counteraction to head to prevent explosive delivery, which can cause a large tear
- Usual delivery: gentle downward guidance to head to deliver anterior shoulder, then gentle upward guidance to head to deliver posterior shoulder
- Clamp x2, cut two inches (four finger-breadths) from umbilicus

**Dry/warm baby, cover, if baby well, give to mom**

**Usual delivery:** gentle downward guidance to head to deliver

- Delivery, which can cause a large tear
- Reassure mom, develop partnership

**Delivery Baby**

- Feel for nuchal cord
  - no nuchal cord or loose nuchal cord
  - tight nuchal cord
  - attempt to reduce cord by pulling over head
- If cannot, clamp (x2) and cut cord

**Tight nuchal cord**

- Attempt to reduce cord by pulling over head
- If cannot, clamp (x2) and cut cord
- Tell mom: stop pushing do not pull on head
- McRoberts + Suprapubic pressure resolves 90% of dystocia

**McRoberts + Suprapubic pressure resolves 90% of dystocia**

- Using two fingers in birth canal, push both arms medially toward baby’s midline to deliver arms (goal is to prevent arms from being raised above head)
- Assistant applies maternal suprapubic pressure to encourage delivery of head
- Continued encouragement of mom to push with contractions, deliver head
- No nuchal cord
  - feel for nuchal cord
  - no nuchal cord
  - goal: delivery in 5-7 min to prevent fetal hypoperfusion/hypoxia

**Shoulder dystocia**

- Deliver Placenta
  - Do not pull cord
  - Wait for lengthening of cord, gush of blood
  - Mom can push
  - Usually delivers within 5 minutes, but can take up to 30 minutes
- Inspire perineum
  - Direct pressure or repair if significantly bleeding tear
  - Inspect perineum, should look like a disc
  - Are there missing parts that may be retained in uterus?

**Dystocia Maneuvers**

1. McRoberts: hyperflexion/adduction of both hips (knees against lateral abdomen) - requires an assistant at each leg
   + Apply 30 seconds suprapubic (not fundal - location is significantly inferior to fundus) pressure directed posteriorly and then laterally (not inferiorly)
   - McRoberts + Suprapubic pressure resolves 90% of dystocia
   - Gentle posterior-directed (downward) traction on head, never pull
2. Corkscrew: insert hand along baby’s back, rotate anterior shoulder toward baby’s face, lateral to pubic symphysis, reinsert hand along baby’s back to rotate posterior shoulder in opposite direction, away from baby’s face, then reattempt delivery (gentle downward guidance on head as mom pushes)
3. Place mom in all-fours position, then gentle downward traction on head (baby’s head guided toward stretcher) (Gaskin maneuver)

**Precipitous Delivery and Postpartum Hemorrhage in the Emergency Department**

**Focused History**

- PMH, Meds
- Estimated Gestational Age/Due date
- G?P? (longer labor expected if first vaginal delivery)
- Did patient receive prenatal care?
- Known OB concerns (placenta previa, multiple gestation)
- Prior C section

**Call For Help**

- Obstetrics (or Telemedicine Obstetrics)
- Pediatrics
- Anesthesia
- Midwifery
- Any assistant physician/nurse

**Can patient be transferred?**

- If presenting part is visible at introitus, patient cannot be transferred, must be delivered in present location
- If contractions are <2 minutes apart or mom feels urge to push, delivery is fast approaching, likely unable to transfer

**Is fetus viable?**

- If fundus is below umbilicus, fetus may not be viable and complicated delivery is unlikely because of baby’s very small size

**Equipment for Emergency Delivery**

- Sterile gloves
- Sterile scissors
- 2 Clamps for umbilical cord
- Bulb syringe/suction
- Sterile sponges/4x4 gauze
- Towels and blankets (preferably warmed)
- Laceration repair kit with absorbable suture (e.g. Vicryl 2-0 or 3-0)

**Postpartum Hemorrhage**

- Resuscitative vascular access
- Reverse coagulopathy if applicable
- Massive transfusion protocol may be required

**Uterine Atony (80%)**

- Most PPH will respond to first line atony treatments
- Oxytocin 40 IU in 1 liter IVNS
- Drain bladder with Foley
- If continued bleeding: Misoprostol (Cytotec) 400 mcg sublingually or 1 g per rectum
- TXA 1 g over 10 minutes, may repeat x1

**Retained products of conception**

- Does placenta deliver easily and look complete?
- 1. Maternal analgesia
- 2. Using external abdominal hand, push uterus inferiorly (toward intravaginal examining hand)
- 3. Sweep inside of uterus with hand to gather POC

**Trauma to birth canal**

- Inspect vagina and cervix
- Direct pressure
- Laceration repair with suture (2-0 Vicryl)
- Inject with epinephrine prn

**DIC/occult coagulopathy**

- CBC, fibrinogen, PT/PTT
- Treat with cryoprecipitate prn
- TEG if available

**Measures for life-threatening bleeding unresponsive to usual treatments**

- Intrauterine balloon tamponade with Bakri Balloon or equivalent
- Uterine packing with gauze/procoagulants
- External aortic compression (using ultrasound if available)
- REBOA / Laparotomy / Cesarean section

**Buttock**

- Encourage mom to push with contractions until axilla/nipple appears
- Never pull baby

**Foot/Leg**

- High risk for umbilical cord prolapse/compression. C section is mandatory if baby is still viable
- Viability can be established by palpating pulsatile umbilical cord, or by checking sonographic fetal heart rate

**Hand/Arm**

- Is presentation truly hand/arm?
  - More common is hand pressed against face - this will self-resolve and lead to normal vertex delivery
  - If hand/arm is truly prolapsed beyond head, baby is horizontal/transverse in canal and cannot be vaginally delivered, C section required

**Telemedicine OB consult if available**

- Neonatal resuscitation equipment, most basic elements:
  - Neonatal cardiopulmonary monitor
  - Neonatal bag valve mask
  - Neonatal laryngoscope (sizes 0 and 1)
  - Neonatal endotracheal tube (sizes 2.5 through 4.0)
  - Neonatal incubator/warmer
  - Medications (oxytocin most important) & blood

**Additional Equipment**

- Carboprost (Hemabate) 250 mcg IM q 15 min prn (contraindicated in asthma)
- Methylergonovine (Methergine) 0.2 mg IM (contraindicated in hypertension)
- Misoprostol (Cytotec) 400 mcg sublingually or 1 g per rectum
- If continued bleeding:
  - TXA 1 g over 10 minutes, may repeat x1
  - Misoprostol (Cytotec) 400 mcg sublingually or 1 g per rectum
  - If continued bleeding:
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**Scenario**

- No nuchal cord
  - feel for nuchal cord
  - no nuchal cord
  - 10 u IM oxytocin
  - Deliver Placenta
    - Do not pull cord
    - Wait for lengthening of cord, gush of blood
    - Mom can push
    - Usually delivers within 5 minutes, but can take up to 30 minutes
  - Inspect placenta, should look like a disc
  - Are there missing parts that may be retained in uterus?
  - If hand/arm is truly prolapsed beyond head, baby is horizontal/transverse in canal and cannot be vaginally delivered, C section required

**Procedure**

- Using two fingers in birth canal, push both arms medially toward baby’s midline to deliver arms (goal is to prevent arms from being raised above head)
- Assistant applies maternal suprapubic pressure to encourage delivery of head
- Continued encouragement of mom to push with contractions, deliver head

**Buttock**

- Encourage mom to push with contractions until axilla/nipple appears
- Never pull baby
  - Support baby’s buttocks/emerging body until axilla/nipple appears
  - Once legs/hips are out, place a towel over them for warmth and better traction, and put mom into McRoberts position

**Foot/Leg**

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