Obstetrical Emergencies Umbilical Cord Prolapse & Shoulder Dystocia

Presented by Felicity Kostera
Clinical Midwife

Umbilical Cord Prolapse

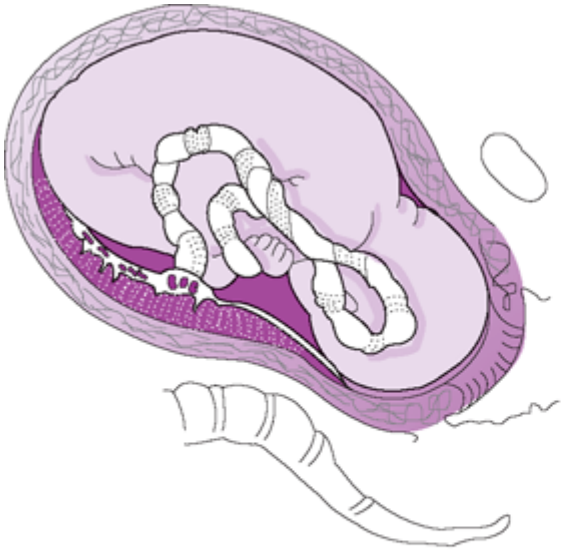
- Umbilical cord prolapse occurs in 0.2-0.4% of birth
- Obstetric interventions increases the likelihood of cord prolapse occurring and have been associated with 47% of cases.
- Interventions include: Amniotomy, induction of labour, external cephalic version and the insertion of intrauterine pressure transducers.
- Risk factors connected to umbilical cord prolapse include: malpresentation/malposition, low birth weight, multiple gestation, multiparity, polyhydramnious, prematurity, contracted pelvis or pelvic tumors and abnormally long umbilical cord.

Reducing perinatal mortality and morbidity

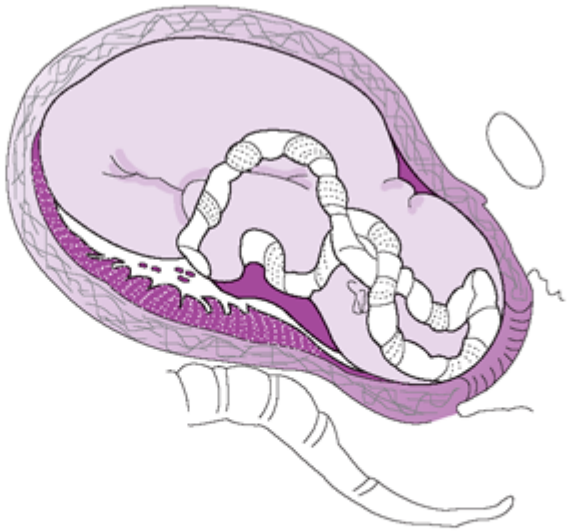
- Advances in management of umbilical cord prolapse has significantly decreased the rate of perinatal mortality and morbidity
- Decreased time interval between diagnosis and delivery
- Other influential factors related to the outcome of umbilical cord compression include: degree of cord compression, length of cord prolapsed and location of the woman when the event occurs

Definitions

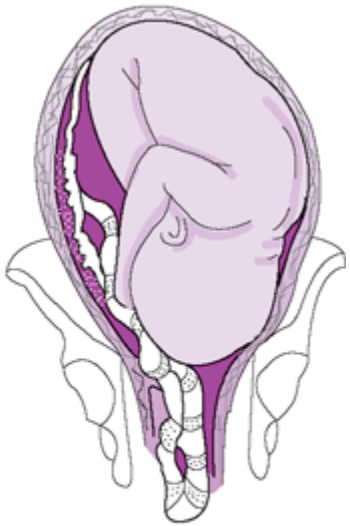
- **Umbilical Cord Presentation**: the umbilical cord lies in front of the presenting part, the membranes are intact.
- **Umbilical Cord Prolapse**: the cord lies in front of the presenting part and the membranes are ruptured
- **Occult Umbilical Cord Presentation/Prolapse**: the cord lies trapped beside the presenting part, rather than below it



occult prolapse
membrane in tact



cord presentation
membrane in tact



Overt prolapse
membrane ruptured

Management

- Be prepared- time is of essence. Review each woman's antenatal history to screen for those at high risk
- All women who are high risk should have a speculum examination or digital vaginal examination immediately following spontaneous rupture of membranes
- Delay in delivery time interval may increase the risk of perinatal morbidity and mortality. The measures described in the management for umbilical cord prolapse are potentially useful but should not result in unnecessary delay of immediate delivery

Procedure for management of Umbilical cord prolapse

- Call for assistance – CODE BLUE prepare to take the woman to theatre
- Document (time of cord prolapse and activation of code)
- 1) **Position the woman** – Exaggerated Sims to relieve pressure on the umbilical cord.
- Left side, semi prone position with her right knee and thigh drawn up: her left arm lies along her back while the hips and buttocks elevated on a wedge or pillow.

Position for prolapse cord

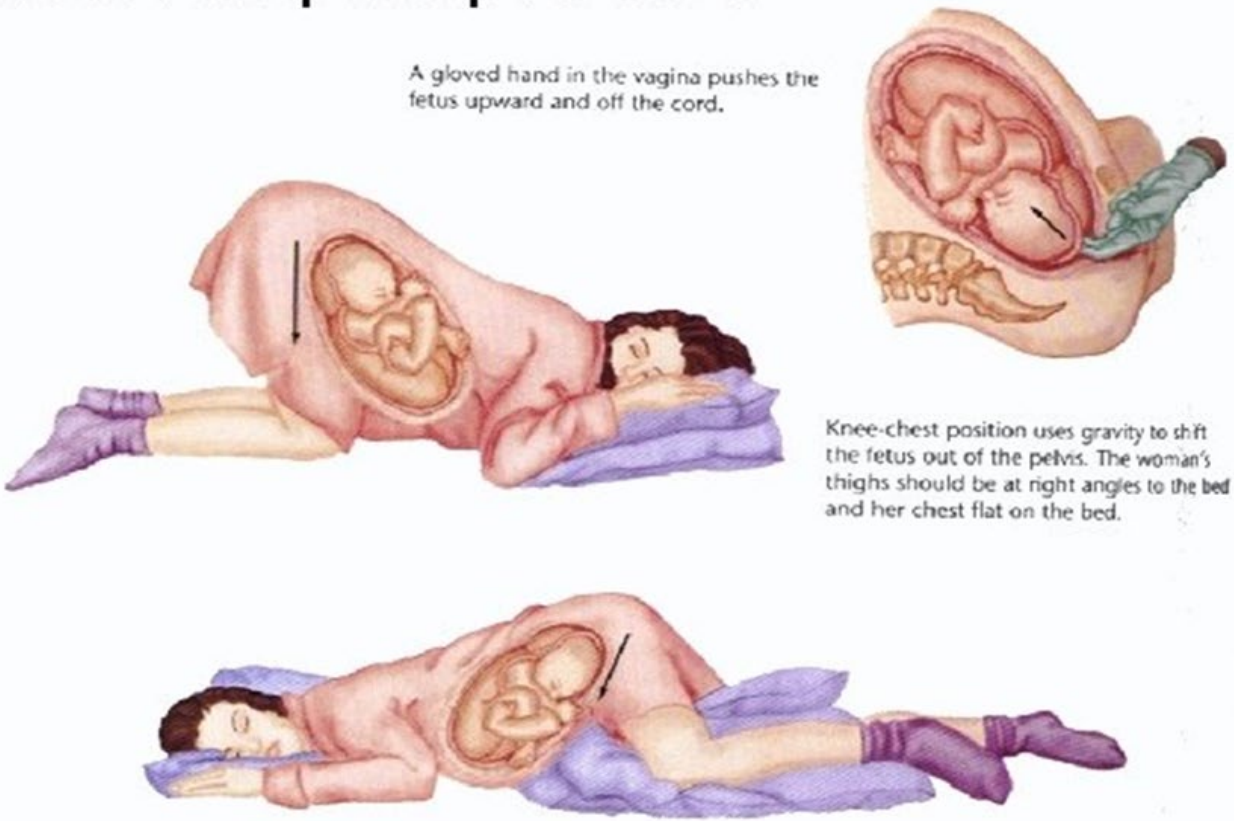


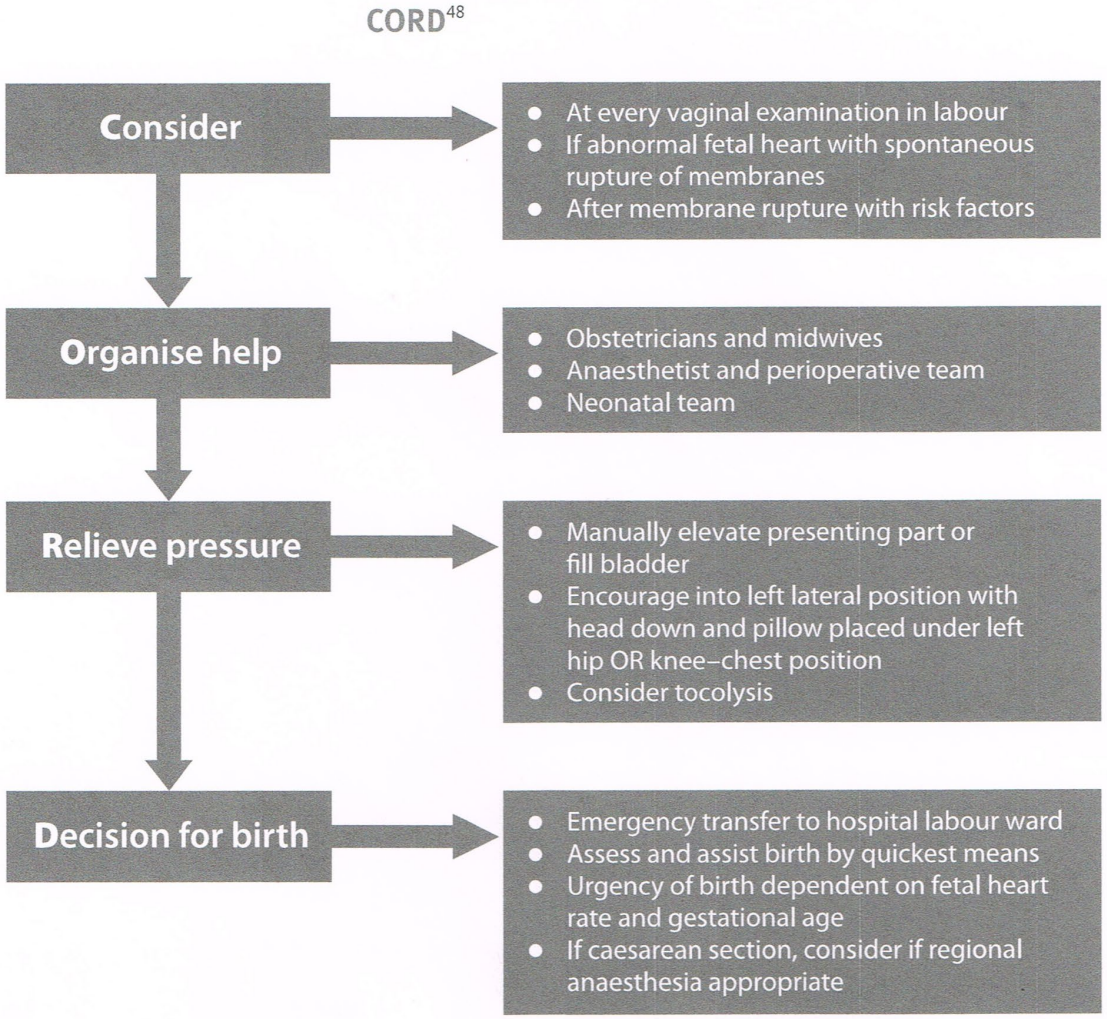
FIGURE 27-8 Measures that may be used to relieve pressure on a prolapsed umbilical cord until delivery can take place.

- 2) **Cord Management**
- Cord protrusion = replace cord back into the vagina. If cord cannot be replaced into the vagina with MINIMAL handling, apply warm soaked normal saline gauze over it.
- Cord remains within vagina = Apply digital pressure to the presenting part, assess pulsation of the cord, assess cervical dilation, presentation and station of the presenting part.

- **3) Fetal Assessment**: Auscultate fetal heart as soon as possible and initiate continuous fetal heart rate monitoring
- **4) Intravenous Therapy:** Cease Syntocinon infusion immediately.
- **5) Administering Terbutaline:** 250micrograms subcutaneously for women in established labour
- **6) Urinary Catheterisation:** consider catheterisation of the bladder if delay to theatre is expected. 500-700ml warmed or room temp Sodium Chloride 0.9%.

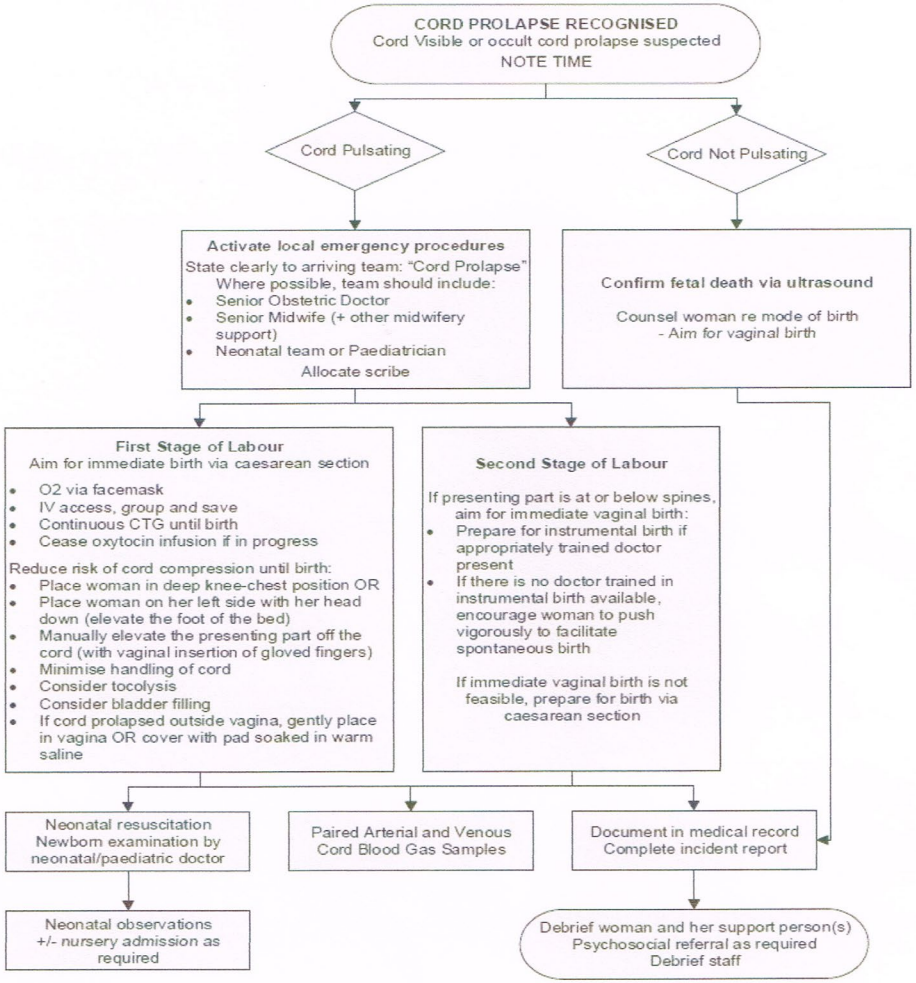
- 7) **Documentation:** Detailed notes of the incident need recorded.
- 8) **Support and Debrief:** To staff and patient/support person

Appendix I: Suggested actions for management of cord prolapse



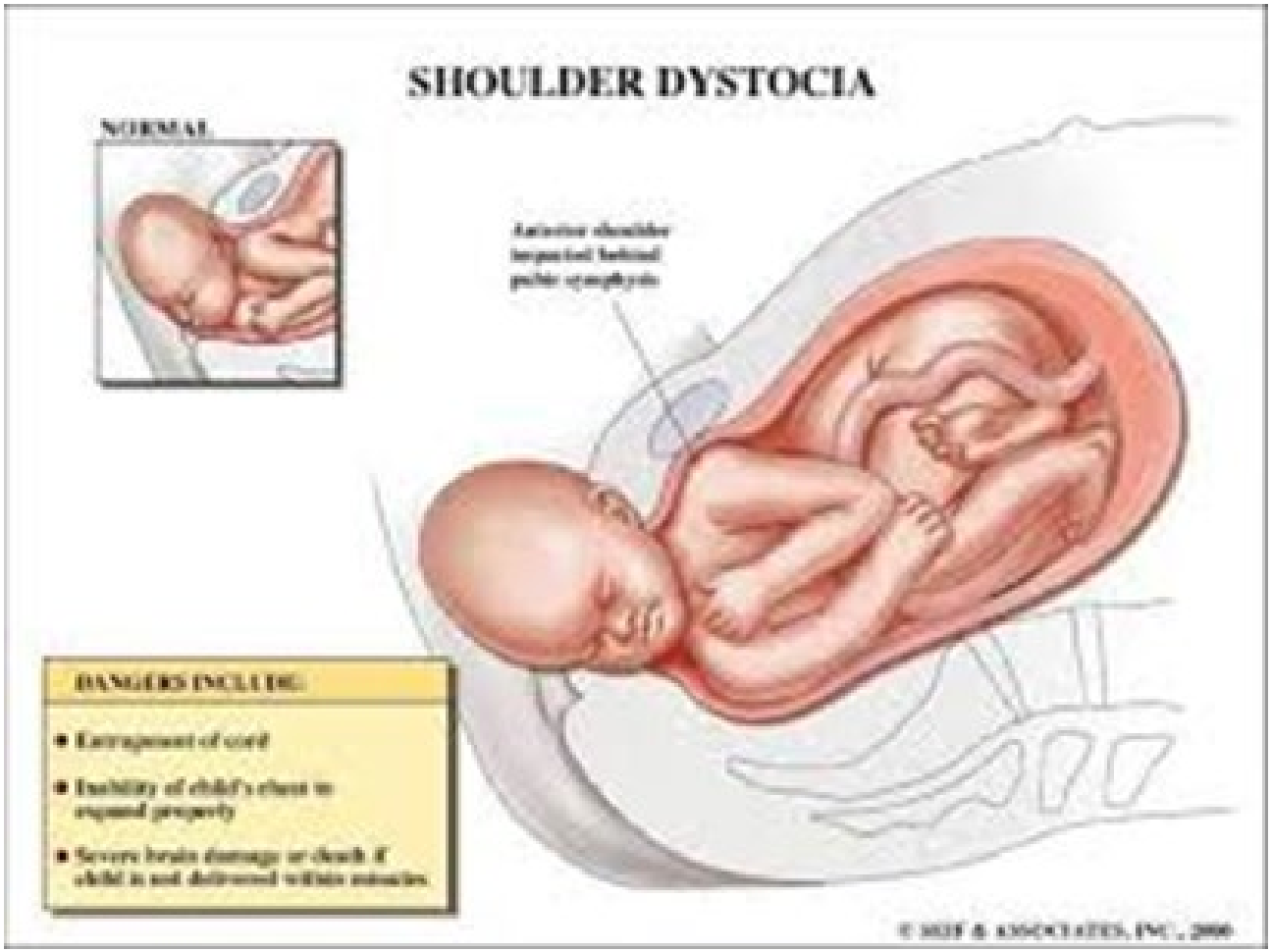
Cord Presentation and Prolapse

Flowchart: Cord Prolapse Management



Shoulder Dystocia

- Shoulder dystocia is defined as a vaginal cephalic birth where additional obstetric manoeuvres are necessary to deliver the baby, after birth of the head and where gentle traction has been unsuccessful.
- Entrapment of the baby's anterior shoulder above the maternal public bone/maternal symphysis or less commonly the posterior, fetal shoulder impacts on the maternal sacral promontory.


SHOULDER DYSTOCIA
NORMAL
DANGERS INCLUDE:
• Entrapment of cord
• Severe brain damage or death if child is not delivered within minutes

Incidence and Outcomes

- There is a wide variation in the reported incidence of shoulder dystocia. Studies involving the largest number of vaginal deliveries (34 800 to 267 228) report incidences between 0.58% and 0.70%. (RANZCOG 2017)
- There can be significant perinatal morbidity and mortality associated with the condition, even when it is managed appropriately. Maternal morbidity is increased, particularly the incidence of postpartum haemorrhage (11%) as well as third and fourth-degree perineal tears (3.8%).
- Brachial plexus injury (BPI) is one of the most important fetal complications of shoulder dystocia, complicating 2.3% to 16% of such deliveries.

Prediction and Prevention

- **Maternal Risk Factors:** Diabetes mellitus, maternal obesity BMI>30 or excessive weight gain during pregnancy, Prolonged pregnancy, Previous shoulder dystocia, Previous large baby.
- **Fetal Risk Factors**: Suspected macrosomia >4.5kg
- **Labour Related Risk Factors:** Induction of labour, Oxytocin augmentation, prolonged/delay first stage, secondary arrest, prolonged second stage.

Warning Signs for Shoulder Dystocia

- Be prepared, all women are at risk for shoulder dystocia.
- Suspected shoulder dystocia warning signs: **1)**Difficulty with birth of the face and chin **2)**The fetal head retracts against the perineum- Referred to as the 'turtle' sign. **3)** Failure of the fetal head to restitute **4)** Failure of the shoulders to descend
- Summon help IMMEDIATELY and commence manoeuvres

Management/Manoeuvres

- Use the mnemonic HELPERR:
- **H** = Help
- **E** = Evaluate for episiotomy
- **L** = Legs (McRobert's Manoeuvre)
- **P** = Pressure (Suprapubic)
- **E** = Enter vagina (Internal manoeuvres)
- **R** = Remove the posterior arm
- **R** = Roll the patient onto all fours
- Note- Episiotomy and the final three (internal manoeuvres and 'all-fours') may be
- considered in a different order depending on clinical situation
- **ALL MANOUVRES SHOULD NOT BE PERFORMED FOR MORE THAN 30 SECONDS**

- **1) Call for help and prepare**
- Discourage maternal pushing until shoulder displacement has been achieved. Move woman to the end of the bed/remove end of bed
- **2) First Line Birth Manoeuvres/External Manoeuvres**
- McRobert's Manoeuver (successfully resolves 90% of cases)
- Suprapublic Pressure (continuous pressure in a downward lateral motion just above maternal symphysis pubis) if unsuccessful try "rocking" movement

- **3) 2nd Line Birth Manoeuvres/Internal Manoeuvres**
- Evaluate need for episiotomy
- Attempt to deliver posterior arm
- Internal Rotational manoeuvers (Rubin's 2/Wood's Screw and Reverse Wood's Screw)
- Roll woman onto all 4's and attempt to deliver posterior arm

- **4) Attempt Last Resort Manoeuvres**
- Deliberate clavicle fracture
- Symphysiotomy
- Zavanelli Manoeuvre (Done in OT with given tocolytic)

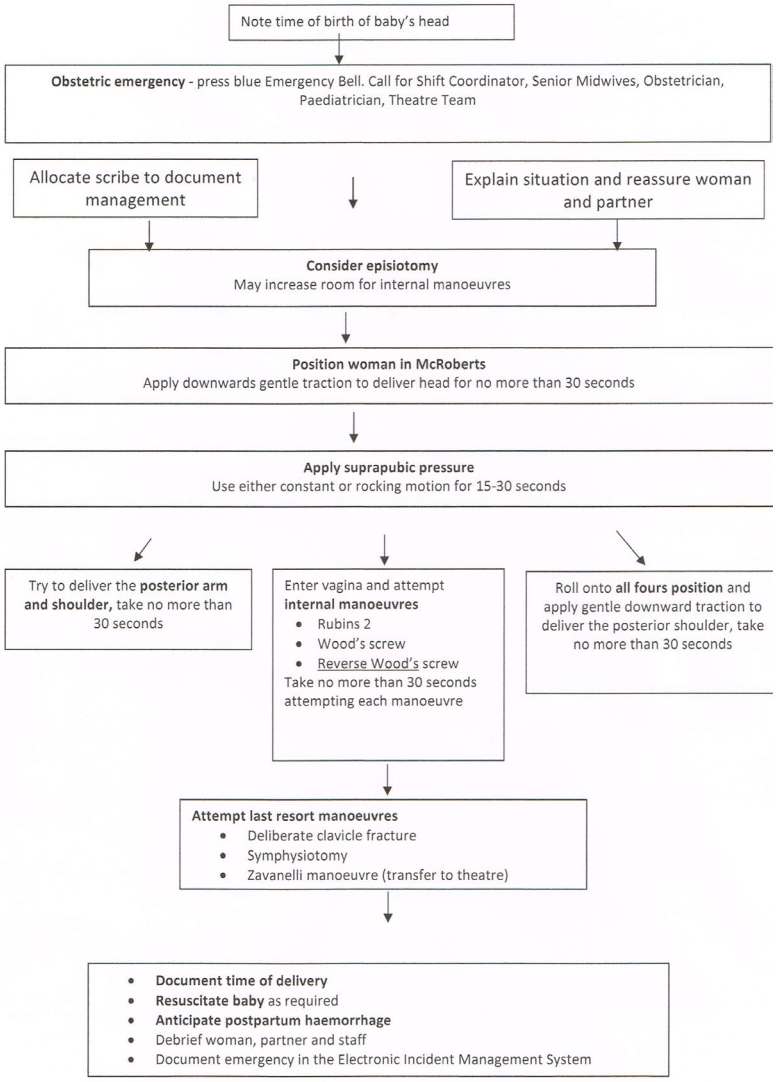
5) Assess for Morbidity

Maternal: soft tissue damage & PPH

Neonatal: Cerebral hypoxia, cerebral palsy, BPI, Fractured clavicle or humerus

- 6) Documentation
- 7) Debrief
- https://youtu.be/UTz2eIiZOL8
- PROMPT Shoulder Dystocia Training

Shoulder Dystocia Flow Chart



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