Standard Operating Procedure 4.2

Emergency Childbirth

Position Responsible: Medical Director
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Related Documents	JRCALC/UK Ambulance Service Practice Guidelines 2016 Standard Operating Procedure 4.1 – Paediatric Life Support Standard Operating Procedure 4.6 – Emergencies in Pregnancy Intrapartum care for healthy women and babies CG190, NICE, February 2017 Management of Breech Presentation, RCOG, March 2017 Shoulder Dystocia, RCOG, March 2012 Newborn Life Support, Resuscitation Council UK
Further Information	PAM

1.0 Background

1.1 The pregnant patient rarely presents to enhanced care teams. When they do present in labour, it is likely to be complicated, advanced, unexpected or preterm. It is also more likely to have been precipitated by another event, such as trauma.

1.2 The aim of this shared SOP for the East of England pre-hospital services is to outline the management of vaginal deliveries including normal, breech and shoulder dystocia.

1.3 Twin delivery is not specifically considered here but it should be noted that the principles are the same. There is a higher incidence of breech delivery particularly with the second twin. It should also be noted that uterotonics should **not** be given until both infants have been delivered.

1.4 Following delivery, all mothers and infants should be transferred to an obstetric unit for assessment by a midwife and/or obstetrician unless a midwife is present and willing to formally take over care.

2.0 General Principles

2.1 In all cases, try to obtain as much history from the mother as time and situation allows. The patient-held record should be sought. Midwife support should be available from the local or booking hospital. CCD can help with requesting midwife presence on scene if required.

2.2 Specifically ask for the presence of a show, broken waters, contractions and/or bleeding. If none present, discuss directly with booked obstetric unit (have details for the patient, EDD, current pregnancy history and previous obstetric history to hand).

2.3 If signs of imminent deliver such as contractions every 1-2 minutes, urge to push/bear down or crowning, then prepare for delivery and request additional resources (a midwife and/or further ambulance).

2.4 Prepare the area for deliver. Cover the area with incontinence pads, set out maternity pack from an ambulance, towels and blankets. Increase the heat of the delivery area (aim for 25°C).

2.5 Use entonox (from the ambulance) as 1st line analgesia. Beware of opioid use and the risk of neonatal respiratory depression.

2.6 All ambulances carry maternity packs and an ambulance should be requested for all imminent out of hospital deliveries. Further advice can be gained from the local obstetric unit or duty on-call PHEM consultant.

3.0 Normal Vaginal Delivery

3.1 The second stage of labour is from full dilatation of the cervix to delivery of the infant.

3.2 From the point of crowning, the following stages occur with suggested management techniques:

A. Crowning - begin supporting the head with a hand.
B. Extension of the head - as the head delivers it will begin to extend and stretch the perineum. It is important to encourage the mother to stop pushing and to pant to allow the tissue to stretch and prevent rapid delivery of the head. Consider gentle pressure to the infant's head to slow down the rate of delivery. This may reduce the likelihood of perineal trauma.
C. Completion of delivery of the head – do not remove loose cord from around the infant's neck (if present) as the baby will deliver through it unless very tight (unravel/ remove cord from neck after birth).
D. Restitution - the head will turn 90 degrees to ensure the shoulders turn into the long axis of the pelvis to allowing delivery of the remainder of the infant. This will happen without the need for intervention.
E. Delivery of the anterior shoulder - can be aided with gentle axial pressure towards the mother's anus.
F. Delivery of the posterior shoulder and the remainder of the infant - can be aided with gentle axial pressure towards the mother's abdomen.

3.4 Immediately following birth and BEFORE cord clamping give a uterotonic (if not contraindicated). Give either oxytocin 5 IU IV or 10 IU intramuscularly or oxytocin 5 IU-ergometrine 500mcg (Syntometrine) intramuscularly if available. Avoid anything containing ergometrine if history of raised BP.

3.5 . The cord should be clamped when it stops pulsating. Delay clamping the cord until at least 60 seconds after delivery, unless the infant's heart rate is <60bpm or other cord integrity/damage concerns. Ensure it is clamped before 5 minutes to allow active management of the 3rd stage (active management is ideally performed by a midwife or obstetrician). Use specific cord clamps (if available) or Spencer Wells forceps approximately 15cm from the umbilicus and 3cm apart. Use cord scissors (if available) or sterile 'Tuff-Cuts'.

3.6 Ideally wait for a midwife to deliver the placenta. Give uterotonics if bleeding is heavy. Controlled cord traction can be carried out with CAUTION as excessive traction can lead to uterine inversion if the placenta has not yet separated. Apply the controlled traction as placenta separation begins to occur. This is often indicated by a small gush of blood. Apply continuous, downwards, and gentle traction whilst supporting the uterus abdominally (figure 1).

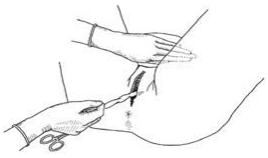

Figure 1

3.7 Ensure the newborn is dried and warmed with dry towels. Manage the newborn baby as per standard Newborn Life Support guidelines.

4.0 Breech Vaginal Delivery

4.1 Breech delivery is whereby the presenting part is seen and is not the head. In the case of suspected breech birth contact and proceed to the booked obstetric unit if delivery is not imminent.

4.2 There are 3 main types of malpresentation

- Frank breech - buttocks present with legs extended
- Flexed breech - buttock present with legs flexed
- Footling breech - feet present (unfavourable to deliver vaginally)

4.3 The majority of breech presentations will deliver with only minimal interventions. The main risk is related to failed delivery of the head.

4.4 Position mother in lithotomy position with legs supported (as per McRoberts) at the edge of the bed. This allows the delivering infant to hang freely down encouraging flexion of the head to aid its delivery.

4.5 Provide minimal stimulation to the infant as it delivers as this can cause extension of the arms and neck which will make delivery more difficult.

4.6 An episiotomy may be needed if more space is judged to be helpful. Consider if buttocks are slow to deliver with a tight appearing perineum.

4.7 Mediolateral Episiotomy is the recommended approach (figure 2)

- Incision begins at the midpoint of the fourchette to avoid damage to the Bartholin's gland
- Incision is directed at 45 degrees angle to the midline
- Direction avoids damage to the anal sphincter but is associated with more bleeding and is more difficult to repair

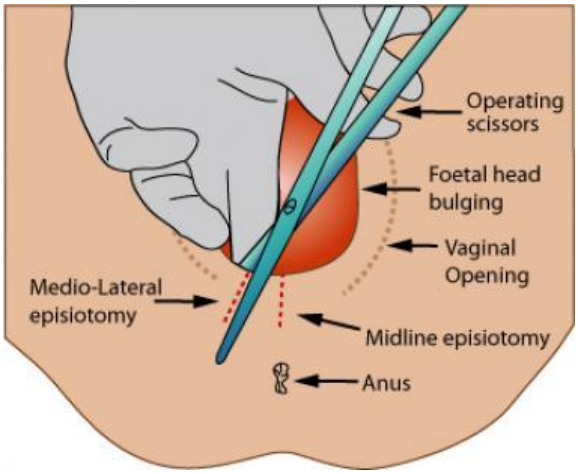

Figure 2

4.8 Allow the buttocks to continue to deliver with the infant in the sacro-anterior position (i.e. umbilicus towards the mother's anus) under maternal effort only.

4.9 Allow the legs to deliver under maternal effort. If legs are in an extended position and having difficulty delivering, then gentle pressure can be applied to the popliteal fossae to encourage knee flexion and easier delivery.

4.10 Continue to allow delivery of the infant's trunk under maternal effort keeping as hands-off as possible.

4.11 Arms and shoulder should next deliver under maternal effort. Loveset manoeuvre can aid this if required. Whilst holding the bony pelvis, soft tissues of the abdomen, rotate the infant through 90 degrees in ea lternatively, use 2 fingers to sweep the arms off the face and downwa

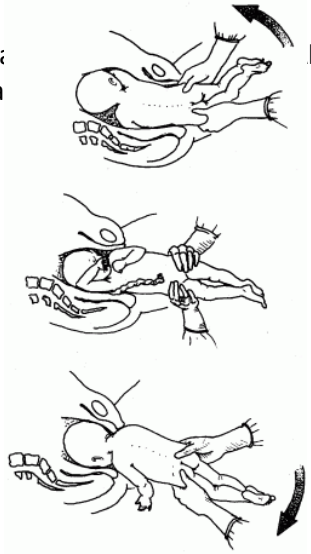

Figure 3

4.12 When the nape of the neck is visible support the infant and allow the head to deliver with maternal effort only without extending the neck.

4.13 If the head fails to deliver an assistant can apply suprapubic pressure to promote head flexion (figure 4).

4.14 Mauriceau-Smellie-Veit manoeuvres (see Figure 4) can be attempted to deliver the head if there is ongoing difficulty.

a) An assistant provides suprapubic pressure
b) Operator places left hand into the vagina along the anterior aspect of the infant
c) Index and middle finger apply pressure on the maxilla of the infant promoting head flexion
d) The right hand should provide gentle traction on shoulders towards the infant's pelvis

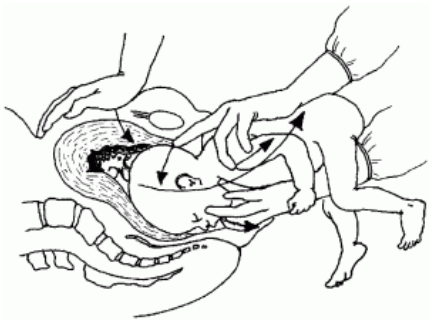

Figure 4

4.15 If the infant fails to deliver at this point then advanced obstetric input is required and immediate transfer to a local consultant led obstetric unit with a pre-alert should be made.

4.16 Following successful delivery management of the third stage should be commenced as for a normal vaginal delivery (Section 3.4 - 3.7).

5.0 Shoulder Dystocia

5.1 Shoulder dystocia is bony impaction of the anterior shoulder in the symphysis pubis. This occurs when the anterior foetal shoulder impacts on the maternal symphysis, or sacral prominence, respectively.

5.2 The incidence of shoulder dystocia is <1% but when it does occur can result in serious perinatal morbidity (brachial plexus injury and hypoxic brain injury) and mortality.

5.3 Normal delivery should occur within a single contraction following delivery of the head (Section 3.2). If the baby does not deliver with the next contraction attempt gentle axial traction. Failure to deliver by a second contraction should lead to a diagnosis of dystocia and appropriate management should be instigated immediately. Other signs suggestive of shoulder dystocia include difficulty delivering the chin/face, retraction of the head (turtle-neck sign), failure of head restitution and failure of the shoulders to descend.

5.4 Once diagnosed, management needs to be prompt to limit foetal morbidity. The **HELPERR** mnemonic is a useful tool:

H Request all available **Help** - is a midwife en-route? Discourage pushing as this may increase impaction of the shoulders.

E **Evaluate** for episiotomy - is the perineum particularly tight? Do you need more room?

L **Legs** into McRoberts position - knees flexed up to mother's abdomen and Hips abducted with gentle axial traction of the foetal head with the next contraction (figure 5a)

P Suprapubic **Pressure** - apply if, after two further contractions, there is failure of McRoberts position with gentle axial traction. Attempt for two further contractions (figure 5b)

A. Ask assistant to stand on the side of the foetal back
B. Use hands in a "CPR grip" and place heel of the hand 2 fingers breadths above the pubis symphysis behind the foetal shoulder
C. Apply moderate pressure over the foetal shoulder pushing down and away
D. Use in conjunction with gently axial traction of the foetal head (unlikely to work without traction as well)

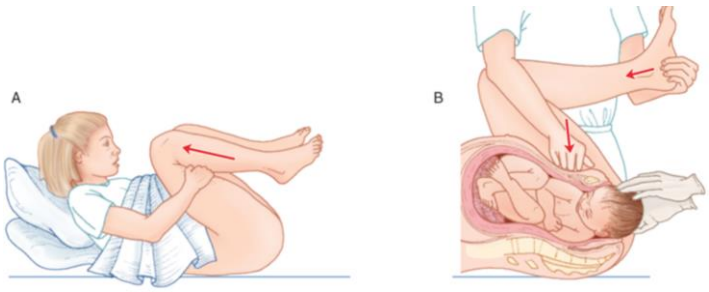

Figure 5

E **Enter** manoeuvres and reconsider need for **episiotomy** if this will help make internal manoeuvres easier. Ensure mother is at the edge of the bed and enter the vaginal posteriorly into the sacral hollow (where the space is greatest). The aim is to dislodge the impacted shoulder(s)

- Rubin II manoeuvre (figure 6) - apply pressure with 2 fingers behind the anterior shoulder (adducts the shoulder and reduces the foetal diameter).
- Woods' Screw manoeuvre (figure 7) - with Rubin II apply 2 fingers of the second hand in front of the posterior shoulder and apply pressure.
- Reverse Woods' Screw manoeuvre - swap positioning of fingers (i.e. in front of the anterior shoulder and behind the posterior shoulder) and attempt rotation in the opposite direction.

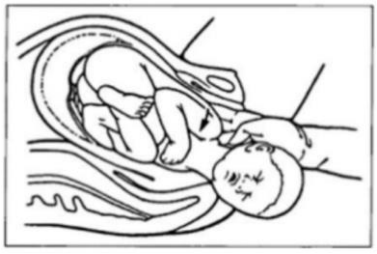

Figure 6

Figure 7

R **Remove** the posterior arm by grasping the wrist of the posterior arm and gently withdrawing it from the vagina by sweeping across the foetal face in a straight line (figure 8).

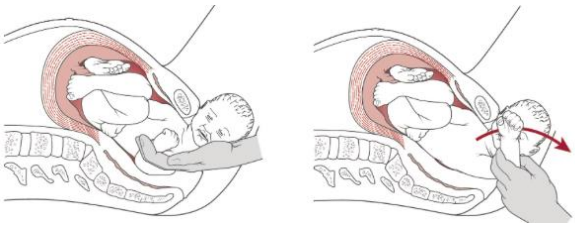

Figure 8

R **Roll** the mother onto all fours and attempt manoeuvres again.

5.5 Attempt each manoeuvre for 30 seconds before moving to the next one if ineffective.

5.6 If there remains failure to deliver consider immediate transfer to an obstetric unit with pre-alert. A short walk to an ambulance stretcher by the mother may be helpful in precipitating delivery of the shoulders so be prepared.

5.7 It is rare for internal manoeuvres to be required and beyond this stage there is significant maternal and foetal morbidity and mortality.

5.8 Following successful delivery management of the third stage should be commenced as for a normal vaginal delivery (Section 3.4 - 3.7). There is an increased risk of post-partum haemorrhage in shoulder dystocia and prepare to manage as per Emergencies in Pregnancy SOP Section 6.0.