Shoulder Dystocia
Guideline for Management

University Hospitals of Leicester NHS Trust

Trust ref: C43/2011

"Currently UHL utilises the terms ‘woman’ and ‘women’ within their obstetric and maternity guidelines but these recommendations will also apply to people who do not identify as women but are pregnant or have given birth."

Contents

1. Introduction and Who Guideline applies to

This document sets out the procedures and processes to follow in the Obstetric emergencies listed below with the intention of providing safe and effective care to these patients.
These guidelines are for the use of all staff involved in the management of shoulder dystocia. This includes midwifery, obstetric and anaesthetic staff.

Risk Management:

A clinical incident reporting form must be completed for all obstetric emergencies. Please refer to the Maternity Services Risk Management Strategy for details.

Related documents:

- Incident and Accident Reporting UHL Policy
- Maternity Records Documentation UHL Obstetric Policy
- Patient Health Records - Documenting UHL Policy

- Thermal Protection of the Newborn UHL Obstetric and Neonatal Guideline
- Resuscitation at Birth UHL Neonatal Guideline
- Brachial Plexus Injury UHL Neonatal Guideline NNU

2. Shoulder dystocia recognition and management

Definition:

Shoulder dystocia is defined as a vaginal cephalic birth that requires additional obstetric manoeuvres to assist the birth of the infant after gentle traction has failed.

Diagnosis:

Diagnosis occurs when, after emergence of the fetal head, further progress towards delivery is prevented by impaction of either the **anterior shoulder on the symphysis pubis or less commonly the posterior shoulder over the sacral promontory**.

Background:

There can be a high Perinatal mortality and morbidity, though recent data suggest neonatal outcomes including Brachial plexus injury can be improved by multidisciplinary simulation Training (Crofts et al 2016, Weiner et al 2016) Maternal morbidity is also increased. Particularly postpartum haemorrhage (11%) and 4th degree perineal tears (3-8%).

Antenatal prediction:

Antenatal prediction of fetal macrosomia and maternal risk factors remain unreliable indicators for shoulder dystocia and should not be used in isolation to decide on mode of delivery.

1. Maternal diabetes with fetal macrosomia consistently seems to be associated with shoulder dystocia, and antenatal diagnosis of these is an important aim of antenatal care.

2. Clinical fetal weight estimation is unreliable and third trimester ultrasound scans have at least a 10% margin for error for actual birth weight and a sensitivity of just 60% for macrosomia (>4.5Kg).

3. Induction of labour for suspected macrosomia in non-diabetic women does not decrease the rate of Caesarean section or reduce maternal complications.

4. There remain no nationally agreed thresholds of fetal weight to recommend delivery in women with or without diabetes.

5. Clinicians should be aware of pre-pregnancy and antenatal risk factors, and these should be clearly documented in the patient's antenatal health record:

Pre-labour risk factors
Previous shoulder dystocia
Maternal obesity
Macrosomia >4.5 kg
Diabetes mellitus, pre-existing or gestational

6. If a large baby is suspected then this should be indicated in the antenatal health record as well as the labour record.

7. Planned caesarean section should be considered for the small group of women with pre-existing or gestational diabetes, regardless of treatment, and suspected fetal macrosomia (estimated fetal weight >4.5Kg).

Over 50% of shoulder dystocia's' occur in babies under 3500g

Recurrence:

The recurrence rate of shoulder dystocia is variable and unpredictable. The reported incidence varies between 1-16%. There is no evidence to support elective caesarean section for a subsequent delivery when there has been a previous shoulder dystocia. Either caesarean section or vaginal delivery is appropriate after a previous shoulder dystocia.

- Factors such as severity of neonatal and maternal injuries, fetal size and maternal choice should be considered when considering mode of delivery following a previous shoulder dystocia.

Intrapartum recognition:

There remain no reliable criteria for intrapartum recognition for shoulder dystocia, although a list of risk factors seems to be agreed in the literature. Intrapartum risk factors ought to be easily identifiable by staff to assist with anticipation of shoulder dystocia. These include:

- Macrosomia
- Prolonged 1st stage of labour
- Oxytocin augmentation
- Prolonged latent phase
- Secondary arrest
- Prolonged 2nd stage
- Assisted vaginal delivery / midcavity forceps

Warning signs:

- Head retraction following birth of head (the turtle sign)
- Difficulty with delivery of face and chin
- Failure of shoulders to descend
- Anterior shoulder fails to release with maternal effort or when routine axial traction applied
- **Restitution does not occur with next contraction**

Anticipation:

a) If a large baby is anticipated a record should be made in the antenatal health record as well as the labour record.

b) A discussion between an experienced Obstetrician and the patient should be documented, and, where applicable, an intrapartum care plan should be completed.

c) If shoulder dystocia is anticipated there should be a clear plan of who should be present at the birth.

d) The registrar on duty on delivery unit should be informed when the woman enters the second stage of labour.

e) As not all cases can be anticipated, all birth attendants should be conversant with the techniques required to facilitate delivery complicated by shoulder dystocia.

Immediate management:

When shoulder dystocia occurs a fire drill approach should be taken, including calling appropriate help and keeping the woman and partner informed.

1. Call for Help

If at home or SMBC, dial 999, ask for a paramedic ambulance, 2nd midwife (if not already present), Inform consultant unit, Contact Midwife co-ordinator on receiving Labour ward to notify of transfer and to arrange Obstetrician (ST3 or above) and Neonatologist to be present on arrival.
If in hospital call for help immediately emergency buzzer – clearly stating the problem and whom you want to help:

- Experienced obstetrician (ST3 or above)
- Core midwife, and further midwifery assistance
- Anaesthetist
- Crash call neonatal resuscitation team

The lead practitioner will co-ordinate activities. Roles should include someone to keep records of manoeuvres used and for how long.

Ask the mother to stop pushing, as at this point since further impaction of shoulders may occur. Note the time the head was born.

Remember cord pH declines at a rate of 0.04 per minute after emergence of the head.

2. Explain to the mother and partner briefly but clearly the problem and proposed actions.

3. Draw mother's buttocks to the edge of the bed and position the woman in McRoberts position as it is the single most effective intervention and should be performed first.

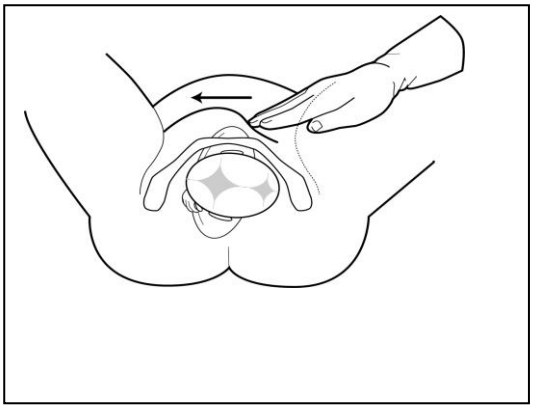
   McRoberts position involves Lying the mother flat removing pillows from under her back and hyperflex the mother's legs against her abdomen (so knees are near ears), resulting in straightening of the sacrum in relation to the lumbar spine, and anterior rotation of the symphysis with a decrease in the angle of inclination which may disimpact the shoulder. The maternal buttocks should be lifted of the bed during hyperflexion of hips.

Attempt routine axial (in line with the fetal spine) traction to assess if shoulders have been released

If the shoulder has not been released move on to the next manoeuvre do not continue to apply traction to baby's head

4. **Use suprapubic pressure** on the side of the fetal back to try to reduce the fetal bisacromal diameter and to rotate the anterior shoulder into the wider oblique of the pelvis disimpact shoulder: apply downwards.

There is no evidence that rocking is better than continuous pressure or that it has to be performed for 30 seconds to be effective
If anterior shoulder not released after suprapubic pressure and routine axial traction another manoeuvre should be attempted.



5. If this is not successful internal manipulation is required and **episiotomy** should be considered. Episiotomy will not relieve bony obstruction but may allow more room to facilitate internal manoeuvres

6. The choice is between all-fours position and internal manipulation. In slim mobile women with no epidural and a single midwife all-fours positions may be appropriate. In women who are less mobile, with epidural in place and a senior obstetrician present internal manipulation is appropriate.

7. Internal manoeuvres are delivery of posterior arm and internal rotational manoeuvres

8. The decision to use internal rotation rather than posterior arm delivery should be left to the attending practitioner depending on circumstances.

9. Internal manoeuvres start with inserting the whole hand into the sacral hollow. Scrunch up hand as if putting on bracelet. Photo shows scrunched hand position

10. Internal rotation or delivery of the posterior arm can then be attempted using whole hand

11. Delivery of the posterior arm will reduce the diameter of the shoulders by the width of the arm. Once birth assistant's hand is placed in vagina posteriorly, and they feel the hand and forearm of the posterior fetal arm, practitioner can take hold of wrist with fingers and thumb and gently release the posterior arm in a straight line. Once delivered gentle axial traction should be applied and baby's body should be born if dystocia resolved.

    If the baby is lying with its posterior arm straight against its body in front of the fetal abdomen it may be possible for birth practitioner to put pressure with thumb at the antecubital fossa which will cause the forearm to flex and it can be grasped and swept out over the chest. This allows for increased space in the pelvis, and with supra pubic pressure and axial traction on the fetal head the shoulder may disengage from behind the symphysis pubis.

12. **Internal Rotational Manoeuvres**

Aims to move the bisacromial diameter out of narrowest diameter of pelvis and into oblique diameter.
This is achieved by either pressing on the anterior aspect (front) or posterior aspect (back) of the posterior (lowermost if woman in supine position) shoulder. Pressure on the posterior aspect of posterior shoulder reduces diameter by adducting the shoulders. Rotation should move shoulders into wider oblique of mothers pelvis resolving the shoulder dystocia and aided by axial traction release the shoulder.

If pressure in one direction has no effect try the opposite direction, pressing on the other side of fetal posterior shoulder or change the hand you are using.

While attempting to rotate shoulders internally, a colleague can attempt suprapubic pressure to assist your rotation but ensure pushing with and not against each other.

13. If manoeuvres fail try them again or change the position of the woman.

14. All Fours Position
    Positioning woman in flexed all fours with thighs against abdomen similar effect as McRoberts position and individual circumstances will guide use of this position for example at Home birth , mobile woman without epidural.
    The change of position itself may release the shoulder.
    Remember if preforming internal manoeuvres in all fours, the posterior shoulder and arm are uppermost and entering the whole hand into the sacral hollow is often more easy to accomplish.

Additional manoeuvres

15. Cephalic replacement (the Zavanelli procedure) should be used only as a last resort, which in the rare cases can be lifesaving. Reported success rates vary. However, a high proportion of babies have irreversible hypoxic acidosis by this stage.

16. Symphysiotomy has been described as a useful technique. Performing this rather uncommon procedure in any emergency situation may carry a substantial risk.

17. Cleidotomy (breaking the clavicle with a finger or surgical division) should be considered a manoeuvre of last resort.

18. Keep accurate records of time and manoeuvres used and actions taken, to include:

- Delivery time of the head
- Direction of the baby at birth i.e. which shoulder was anterior at the time of dystocia
- The time assistance called for and the time assistance arrived
- Staff in attendance
- The manoeuvres performed, by whom, time and sequence
- Description of traction used
- Whether an episiotomy was performed/extended after delivery of the head
- The time of delivery of the rest of the body
- Condition of the baby (including Apgar score)
- Cord gases
- Review of baby by paediatrician

- Explanation to parents
- All cases of actual and suspected brachial plexus injury and shoulder dystocia should be recorded in the patients' case notes and via E3
- All suspected or actual injuries to the baby identified after delivery by the neonatologist will require follow up with neonatal services. A follow up plan should be made by the neonatologist prior to discharge from hospital.
- Clear documentation and filing of relevant documentation in case notes, including the completed proforma (see appendix), completion of incident form and consider the appropriateness of duty of candour.

AVOID
Fundal pressure and excessive downward traction on the head and neck can result in brachial plexus damage and damage to the cervical vertebrae.
Jerky movements (also associated with brachial plexus injury)

SO DO NOT PULL QUICKLY DO NOT PULL HARD DO NOT PULL DOWNWARDS.

The combination of McRoberts manoeuvre and suprapubic pressure resulting in disimpactation of the fetal shoulders may be all that is required in 50- 91% of cases. McRoberts has a low rate of complications and should be used first.

3. Education and Training

Training for the management of shoulder dystocia ("skills drills") is provided within Maternity as part of multidisciplinary education. Details are held in the Clinical management Group Training Needs Analysis.

4. Monitoring Compliance

These are based on a review of incident forms and outcomes by the Risk Manager. Cases with brachial plexus injury are then reviewed in conjunction with the clinical lead and referred to the Perinatal Risk Group if appropriate.

5. Supporting References

Guideline Development Methodology:

Extensive literature searches were undertaken of the Cochrane, CINAHL, MEDLINE, and Embase databases. Few papers were identified of appropriate trials on which to base recommendations on management of emergencies. A textbook and Guidelines search was performed, and the following texts chosen to support recommendations:

Winter C , Crofts J , Draycott T , Muchatuta N (Eds) (2017) PROMPT (Practical Obsetric Multi- Professional Training Course Manual (3rd Ed) Cambridge University Press ,Cambridge

Fransen AF,Van de Ven J , Schuit E , et al (2017) Simulation based team training for multiprofessional obstetric care teams to improve patient outcome :a multicentre cluster randomised controlled trial **BJOG**124:641-50

Gherman RG et al. The McRobert's manoeuvre for the alleviation of shoulder dystocia: how successful is it? *Am J Obstet Gynecol*. 1997; 178: 656 – 61.

Hope P, Breslin S, Lamont L, Lucas A, Martin D, Moore I, Pearson J, Saunders D, Settatree R (1998) Fatal Shoulder Dystocia; A review of 56 cases reported to Confidential Enquiry into Stillbirths and Deaths in Infancy. *British Journal of Obstetrics and Gynaecology* **105**:1256-1261

Maternal and Child Health Research (1998) *Confidential enquiry into still births and Deaths in Infancy 5th annual report.* Maternal and Child Health Research Consortium, London

RCOG (2012) : Shoulder dystocia – Guideline number 42. London. RCOG; https://www.rcog.org.uk/globalassets/documents/guidelines/gtg_42.pdf (accessed July 2022)

Weiner CP,Collins L,Bently S, Dong Y, Satterwhite CL,(2016) Multi-professional training for obstetric emergencies in a US hospital over a 7 year interval :an observational study J Perinatal 36:19-24

Incident and Accident Reporting UHL Policy Trust ref: A10/2002
Maternity Records Documentation UHL Obstetric Policy Trust ref: C23/2016
Patient Health Records - Documenting UHL Policy Trust ref: B30/2006
Thermal Protection of the Newborn UHL Obstetric and Neonatal Guideline Trust ref: C166/2016
Resuscitation at Birth UHL Neonatal Guideline Trust ref: B35/2008
Brachial Plexus Injury UHL Neonatal Guideline NNU Trust ref: C84/2007

6. Key Words

Shoulder dystocia McRoberts Suprapubic pressure Internal manoeuvres

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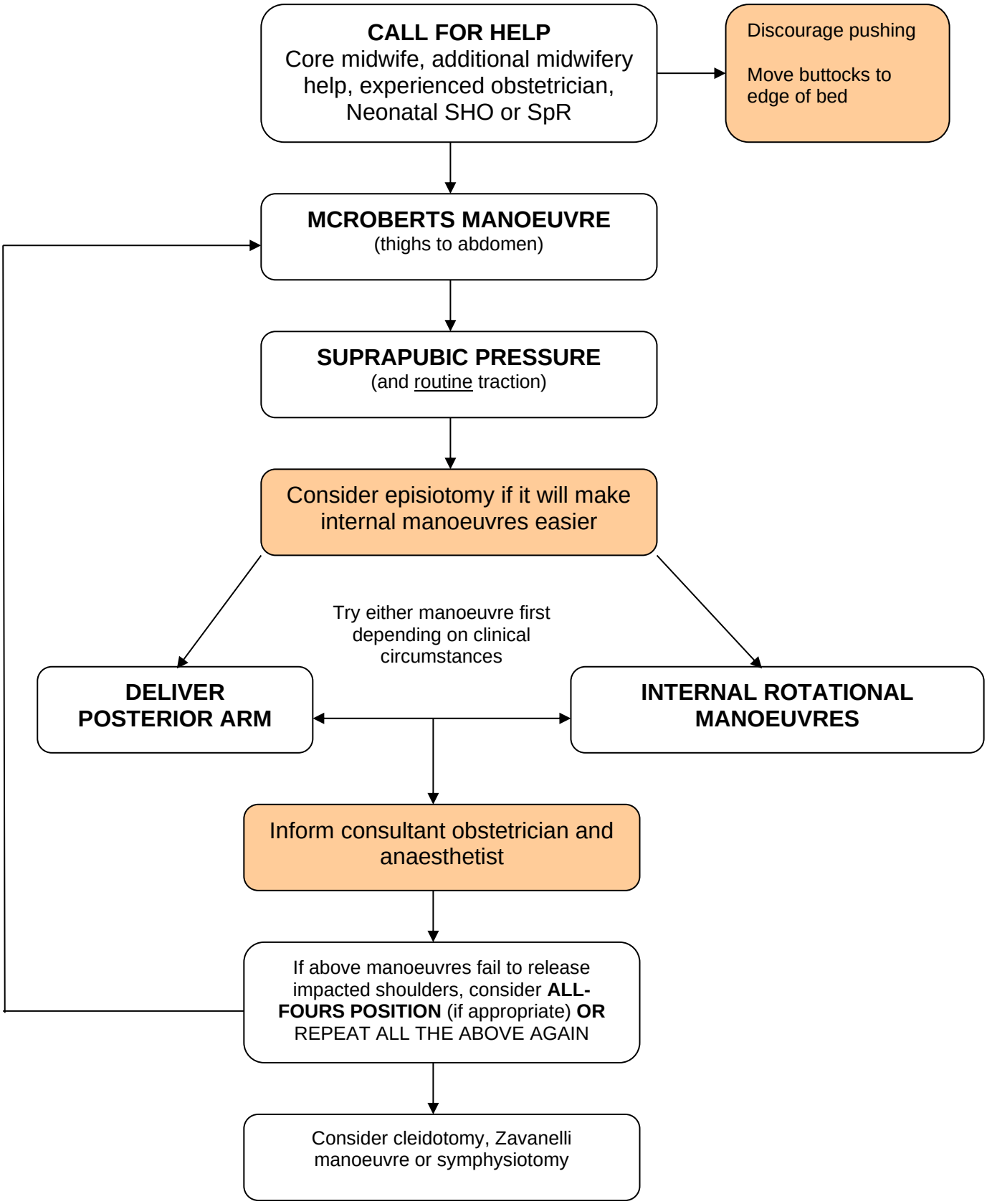
The Trust recognises the diversity of the local community it serves. Our aim therefore is to provide a safe environment free from discrimination and treat all individuals fairly with dignity and appropriately according to their needs.
As part of its development, this policy and its impact on equality have been reviewed and no detriment was identified.

CONTACT AND REVIEW DETAILS			
Guideline Lead (Name and Title) A Akkad - Consultant			**Executive Lead** Chief Nurse
Details of Changes made during review:			
Date	**Issue Number**	**Reviewed By**	**Description Of Changes (If Any)**
June 2022	**4**	**A Akkad Maternity guideline group**	**Added immediate actions to be taken in the community or SMBC Added reference to consider duty of candour Re-formatted Updated related documents**

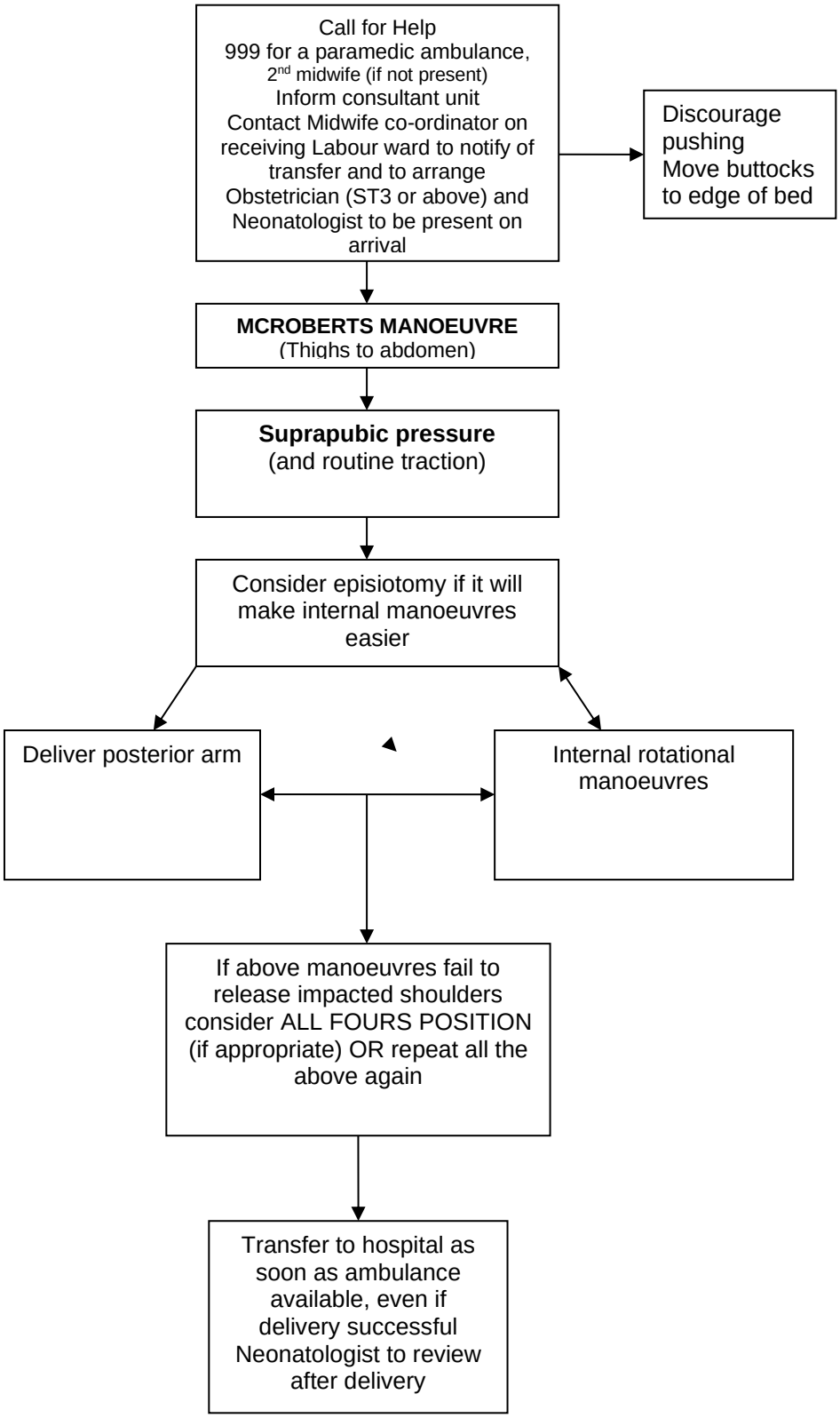
Appendix 1: Algorithm for the management of shoulder dystocia



Baby to be reviewed by Neonatologist

DOCUMENT ON PRO FORMA, E3 AND COMPLETE CLINICAL INCIDENT REPORTING FORM

Appendix 2: Algorithm for the Management of Shoulder Dystocia in a Stand Alone Birth Centre or Community Setting



DOCUMENT ON PROFORMA, E3 AND COMPLETE CLINICAL INCIDENT REPORTING FORM

Appendix 3: SHOULDER DYSTOCIA DOCUMENTATION

Date…….. Time……

Person completing form (& designation)……..

Signature……

MOTHERS NAME_____

DATE OF BIRTH_____

HOSPITAL NUMBER_____

CONSULTANT_____

Called for help at:_____		**Emergency call via switchboard at:**_____		
Staff present at delivery of head:		**Additional staff attending for delivery of shoulders:**		
Name	**Role**	**Name**	**Role**	**Time arrived**

Procedures used to assist delivery	**By Whom**	**Time**	**Order**	**Details**	**Reason if not performed**
McRoberts' Position					
Suprapubic Pressure				From Maternal **left** / **Right** (Circle as appropriate)	
Episiotomy				**Enough access** / **tear present** / **already performed** (Circle as appropriate)	
Delivery of Posterior Arm				**Right** / **Left** arm (Circle as appropriate)	
Internal Rotational Manoeuvre					
Description of rotation					
Description of traction	Routine axial (as normal vaginal delivery)	Other-		Reason if not routine axial:	
Other manoeuvres used					

Mode of delivery of head		Spontaneous		Instrumental – Vacuum / Forceps	
Time of delivery of head		Time of delivery of Baby		Head-to-body delivery interval	
Fetal position during dystocia		Head facing the maternal **left** **Left** fetal shoulder anterior		Head facing the maternal **Right** **Right** fetal shoulder anterior	
Birth Weight	**kg**	**Apgar**	**1 min:**	**5 mins:**	**10 mins:**
Cord Gases		**Art pH:**	**Art BE:**	**Venous pH:**	**Venous BE**
Explanation to parents	Yes	By:		Incident Form completed	Yes

Neonatologist called? Yes Neonatologist arrived……..... Name……..

If Neonatologist not called or didn't arrive, give reason .....

……

Baby assessment after birth (may be done by midwife) Any sign of weakness? Any sign of potential bony fracture? Baby admitted to Neonatal Intensive Care Unit? **Assessment by: ……**	Yes Yes Yes	No No No	**If YES to any of these questions for review or follow up by Consultant Neonatologist.**