Mid Essex Hospital Services NHS
NHS Trust

GUIDELINE FOR THE MANAGEMENT OF SHOULDER DYSTOCIA	CLINICAL GUIDELINES Register no: 04262 Status: Public

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Review No	Reviewed by	Review Date
1.0	Nina Smethurst and Karen Bartholomew	September 2001
2.0	Nina Smethurst and Karen Bartholomew	July 2003
3.0	Judy Evans	February 2006
4.0	Simon Bishop, Deborah Cobie, Sarah Moon	July 2009
4.1	Sarah Moon – Clarification to Appendix B	October 2010
5.0	Sarah Moon	May 2012
5.1	Sarah Moon – Clarification to 5.4 & 10.1	September 2012
5.2	Sarah Moon – Clarification to 12.1	December 2012

It is the personal responsibility of the individual referring to this document to ensure that they are viewing the latest version which will always be the document on the intranet

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1.0 Purpose of the Guideline

1.1 The purpose of this guideline is to enable the practitioner to anticipate, recognize and manage this serious obstetric emergency.

2.0 Equality and Diversity

2.1 The Mid Essex Hospital NHS Trust is committed to the provision of a service that is fair, accessible and meets the needs of all individuals.

3.0 Background

3.1 An impaction of the fetal anterior shoulder against the maternal symphisis pubis after the fetal head has been delivered and occurs when the breadth of the shoulders exceeds the diameter of the pelvic inlet preventing immediate delivery of the baby (ALSO 2000)

4.0 Introduction

4.1 The national incidence is 2 to 3 per thousand deliveries (0.2-0.3%) at term. This increases to 1.3% at 42 weeks gestation. The incidence of shoulder dystocia increases in babies weighing between 4 and 4.5 kg, but more than 50% of cases occur in babies of normal weight.

4.2 Risk factors pre-labour include previous shoulder dystocia, macrasomia, diabetes mellitus, high body mass index (BMI over 30),and induction of labour.

4.3 Intrapartum risk factors include prolonged first stage of labour, prolonged second stage of labour, oxytocin augmentation and assisted vaginal delivery.

4.4 In terms of prevention, shoulder dystocia is a largely unpredictable and unpreventable event. No studies have found a single risk factor or combinations that are reliable predictors. If antenatal risk factors are identified this should be discussed with the mother and obstetrician and recorded in the case notes. Anticipation can then aid forward planning of care.

4.5 Diagnosis: a risk factor that may have already been identified occurs when the fetal head is said to ‘turtle neck’ i.e. it advances and retracts just as when a turtle sticks its head out of its shell. Once the head is born gentle traction fails to achieve delivery.

4.6 On recognition, this now becomes an emergency situation. The manoeuvers described below represent a safe, structured way of approaching the situation and are based on the teachings of ALSO (Advanced Life Support in Obstetrics). This is taught in mandatory training for maternity services using dolls and mannequins.

5.0 Procedure

5.1 An aide memoir is the '**HELPERR'** mnemonic as follows:

- **H** HELP (call for)
- **E** EPISIOTOMY (evaluate for)
- **L** LEGS (in to McRoberts position)
- **P** PRESSURE (suprapubic)
- **E** ENTER VAGINA (internal maneuvers)
- **R** ROLL (on to hands and knees)
- **R** REMOVE POSTERIOR ARM

(Refer to Appendix A for detailed procedural action plan)

5.2 The individual situation will determine the order of actions taken i.e. it may be appropriate to remove the posterior arm before trying the internal manoevres. This will depend on clinical circumstances.

5.3 Once help has been called for and evaluation for episiotomy carried out the order of the mnemonic does not have to be strictly adhered to. Each manoevre should be tried for 30 to 60 seconds before moving onto the next step.

5.4 In all cases of shoulder dystocia, the midwife responsible for the care of the patient should ensure that the shoulder dystocia proforma is completed. Furthermore, the original copy should be retained in the health care records and a photocopy of the proforma should be placed in the labelled tray in the Labour Ward Office. Furthermore, the responsible midwife should report the incident via Datixweb system.
(Refer to Appendix B for a detailed illustration of the shoulder dystocia proforma)

6.0 Complications

6.1 In the event the manoevres fail the obstetric registrar may need to perform:

- Symphysiotomy - division of the symphisis pubis
- Zavanelli manoeuvre, procedure to LSCS - the head is flexed and reinserted into the vagina
- Deliberate clavicle fracture / destructive surgery - if the baby has died; use with caution as a last resort with consultant obstetrician in attendance

6.2 Maternal complications of shoulder Dystocia:

- Soft tissue injury and sphincter damage
- Post partum haemorrhage

(Refer to ‘Guideline for the management of postpartum haemorrhage’, register number 04234)

- Uterine rupture
- Symphyseal separation

6.3 Neonatal complications of shoulder dystocia:

- Brachial plexus injury
- Clavicle and humeral fracture
- Acidosis the pH drops by 0.04 per minute
- Hypoxic brain injury

7.0 Immediate Postpartum Management

7.1 Ensure careful observations are carried out on the baby, due to the risk of trauma and possible neurological damage.
(Refer to ‘Guideline for resuscitation of the newborn, register number 07074)

7.2 Clear accurate documentation of the sequence of manoevres, timings and personnel present to be recorded in the hospital maternity notes. Contemporaneous record keeping is essential (refer to the guideline for maternity record keeping including documentation in handheld records, register number 06036).

7.3 The use of a shoulder dystocia proforma is recommended by the Royal College of Obstetricians and Gynaecologists.
(Refer to Appendix B)

7.4 Cord blood samples should be taken to ascertain aterial and venous levels and the result should be stapled to the neonatal page of the labour pregnancy booklet.

7.5 Debriefing should ensue for the patient, her family and all staff involved.

7.6 A risk event form should be completed to audit the procedure.

8.0 Brachial Plexus Injury

8.1 The incidence of brachial plexus injury is 0.8 – 2 per 1000 live births

8.2 The risk factors are as follows:

- Macrosomia
- Prolonged labour
- Shoulder dystocia
- Breech delivery

8.3 Brachial plexus involves the nerve roots of C_5 to T_1; and the classification is according to the roots involved:

- Grade I - C_5 - C_6 - Causes paralysis of shoulder muscles and elbow flexors

85% recover with no treatment

- Grade II - C_5 - C_7 - As above plus paralysis of wrist and digit extensors
  60% will recover, 30% will have severe long-term effects,
  e.g. short limb, small hand, poor wrist supination

- Grade III - C_5 - T_1 - Complete paralysis of arm
  50% will recover with no treatment

- Grade IV - C_5 - T_1 - Complete paralysis and Horner's syndrome (meiosis and ptosis)
  (preganglionic injury.No spontaneous recovery - will develop deformed elbow/hand-avulsion from cord and/or poor limb growth, muscular inco-ordination and disturbed rupture of nerves in the sensation if not treated posterior triangle of neck)

8.4 A history, physical examination and the following investigations may identify and diagnose brachial plexus:

- Posture of the arm. Movements of fingers, wrist, elbow, shoulder. Neck swelling or haematoma
- Bruising or swelling of the arm

9.0 Referral Process

9.1 If a midwife or senior house officer has identified any of the above findings in point 8.4, then a referral should be made to the paediatric registrar to conduct a further examination of the baby to investigate the following:

- Clavicular, humeral fractures (X-Ray may be required).
- Horner's syndrome
- If there is perinatal hypoxia, observe for convulsions and check cord gas.
- Look for dislocation of the shoulder, confirm by ultrasound scan of the shoulder
- Clear Documentation of resuscitation and examination.
- Chest X ray for phrenic nerve palsy

9.2 If a brachial plexus injury has been identified the paediatric registrar should inform his/her consultant and maintain clear and accurate documentation throughout.
(Refer to Appendix B)

9.3 The management of brachial plexus injury should involve the explanation to parents of the physical findings and diagnosis.

9.4 Questions regarding the delivery should be discussed with the obstetrician or midwife.

9.5 A referral should be made by the paediatric registrar to the Physiotherapy department at Moulsham Grange, Chelmsford for all babies with a brachial plexus injury.

9.6 A follow-up out-patient appointment should be arranged for two weeks at Broomfield Hospital, Chelmsford on discharge home.

9.7 If the infant continues to show limited or no movement at three months of age, a specialist referral should be made to the Royal National Orthopaedic Hospital, London.

10.0 Staffing and Training

10.1 All midwifery and obstetric staff must attend yearly mandatory training which includes skills and drills training, involving the management of shoulder dystocia.
(Refer to 'Mandatory training policy for Maternity Services (incorporating training needs Analysis. Register number 09062)

10.2 All midwifery and obstetric staff are to ensure that their knowledge and skills are up-to-date in order to complete their portfolio for appraisal.

11.0 Infection Prevention

11.1 All staff should follow Trust guidelines on infection prevention by ensuring that they effectively 'decontaminate their hands' before and after each procedure.

11.2 All staff should ensure that they follow Trust guidelines on infection prevention, using Aseptic Non-Touch Technique (ANTT) when carrying out procedures i.e. vagina examinations and conducting deliveries.

12.0 Audit and Monitoring

12.1 Audit of shoulder dystocia cases should be undertaken by the Specialist Midwife for Risk Management. Findings from individual cases will be reported at the Maternity Risk Management Group (MRMG) and progress with any identified actions will be monitored at subsequent meetings

12.2 Audit of compliance with this guideline will be considered on an annual audit basis in accordance with the Clinical Audit Strategy and Policy, the Maternity annual audit work plan and the NHSLA/CNST requirements. The Audit Lead in liaison with the Risk Management Group will identify a lead for the audit.

12.3 As a minimum the following specific requirements will be monitored:

- Identification of factors associated with shoulder dystocia
- Systematic emergency management of shoulder dystocia
- Standards for record-keeping in relation to shoulder dystocia
- Process for using a reporting form which contains the RCOG minimum data set
- Process for the follow up of the newborn where there is actual/suspected brachial plexus injury or any other injury associated with the complications of the delivery
- Maternity service's expectations for staff training, as identified in the training needs analysis

12.4 A review of a suitable sample of health records of patients to include the minimum requirements as highlighted in point 12.2 will be audited. A minimum compliance 75% is

required for each requirement. Where concerns are identified more frequent audit will be undertaken.

12.5 The findings of the audit will be reported to and approved by the Maternity Risk Management Group (MRMG) and an action plan with named leads and timescales will be developed to address any identified deficiencies. Performance against the action plan will be monitored by this group at subsequent meetings.

12.6 The audit report will be reported to the monthly Maternity Directorate Governance Meeting (MDGM) and significant concerns relating to compliance will be entered on the local Risk Assurance Framework.

12.7 Key findings and learning points from the audit will be submitted to the Patient Safety Group within the integrated learning report.

12.8 Key findings and learning points will be disseminated to relevant staff.

13.0 Guideline Management

13.1 As an integral part of the knowledge, skills framework, staff are appraised annually to ensure competency in computer skills and the ability to access the current approved guidelines via the Trust's intranet site.

13.2 Quarterly memos are sent to line managers to disseminate to their staff the most currently approved guidelines available via the intranet and clinical guideline folders, located in each designated clinical area.

13.3 Guideline monitors have been nominated to each clinical area to ensure a system whereby obsolete guidelines are archived and newly approved guidelines are now downloaded from the intranet and filed appropriately in the guideline folders. 'Spot checks' are performed on all clinical guidelines quarterly.

13.4 Quarterly Clinical Practices group meetings are held to discuss 'guidelines'. During this meeting the practice development midwife can highlight any areas for further training; possibly involving 'workshops' or to be included in future 'skills and drills' mandatory training sessions.

14.0 Communication

14.1 A quarterly 'maternity newsletter' is issued and available to all staff including an update on the latest 'guidelines' information such as a list of newly approved guidelines for staff to acknowledge and familiarise themselves with and practice accordingly.

14.2 Approved guidelines are published monthly in the Trust's Focus Magazine that is sent via email to all staff.

14.3 Approved guidelines will be disseminated to appropriate staff quarterly via email.

14.4 Regular memos are posted on the guideline notice boards in each clinical area to notify staff of the latest revised guidelines and how to access guidelines via the intranet or clinical guideline folders.

15.0 References

Royal College of Obstetricians and Gynaecologists (2008) Shoulder dystocia. London: RCOG.

King's Fund. (2008).Safe Births: Everybody,s business – Independent Inquiry into Safety of Maternity Services in England. London: King's Fund.
www.kingsfund.org.uk

Appendix A

Chart to illustrate the Emergency Procedure for the Diagnosis of Shoulder Dystocia

Action	Rational
H • Call for Help: **Bleep 4444 – Code Red** **Code Blue** • Extra midwifery support • Obstetric registrar, senior house officer, paediatric registrar and anaesthetist	• The additional staff will be able to: • Assist with maneuvers • Act as scribe, document & record timings • The baby may require resuscitation • The mother may need an anaesthetic
E • Evaluate for **EPISIOTOMY**	• Although not a soft tissue problem an episiotomy may make more space for the internal manoevres that may be necessary for delivery
L • **LEGS** • Place legs into the McRoberts position. hyperflexion of the maternal hips so that the thighs touch her abdomen	• This straightens the lumbar lordosis and flattens the sacral promontory, increasing the antero-postero diameter of the pelvis • The manoevre encourages flexion of the fetal spine, allowing the posterior shoulder to slip over the sacral promontory into the sacral hollow
P • **SUPRAPUBIC PRESSURE** • The assistant uses arm/hand position similar to that used when providing cardio-pulmonary resuscitation to push on the fetal shoulder from the side where the fetal back is positioned • Initially apply continuous pressure for 30 seconds then try a rocking motion for 30 seconds (known as Rubin 1 maneouver)	• Suprapubic pressure aims to adduct the anterior fetal shoulder

E • **ENTER** • First entry manoevre. Insert two fingers into the vagina and position them to apply pressure on the **posterior** aspect of the **anterior** shoulder. Try for 30 seconds If the shoulders move attempt delivery (Known as Rubins 2 manoevre)	• This manoevre aims to rotate the shoulders into the oblique diameter
• **Enter** vagina. Second internal manoevre Insert two fingers into the vagina & position them to apply pressure on the **anterior** aspect of the **posterior** shoulder. This is the Woods Screw Manoevre • It can be combined with the Rubin 11 manoevre. Try for 30 seconds. If the shoulders move attempt delivery. • If still unable to deliver then continue rotation through 180 degrees & attempt delivery again	• This manoevre aims initially to rotate the shoulders in the oblique diameter. The next aim is to rotate the baby so that the shoulder that was originally posterior becomes anterior
• **Enter** vagina. Third internal manoevre. Slide two fingers down to apply pressure to the posterior aspect of the posterior shoulder. Try to rotate the baby through 180 degrees and attempt delivery again • This is the Reverse Woods screw Manoevre	• This manoevre aims to rotate the posterior shoulder towards the symphisis in the opposite direction.
R • **ROLL TO ALL FOURS** • First try to deliver the posterior arm • You can try all the other ‘enter’ manoevres	• Rolling to all fours increases the antero-posterior diameter. Movement and gravity may help dislodge the impacted shoulder
R • **REMOVE THE POSTERIOR ARM** • Insert your fingers into the vagina to locate the posterior arm. • Splint the forearm and flex the arm at the elbow. • Sweep the arm over the fetal chest	• Delivering the posterior arm will make room for the shoulders to deliver

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Appendix B

Shoulder Dystocia Proforma

First Name:	
Surname:	
Hospital Number:	
Date:	
Place of Birth:	

H	**Delivery of Head:**	Spontaneous		Instrumental		**Please Tick**
	Delivery Lead:	Consultant		Registrar	Midwife	
	Registrar called:	Yes	No	Time called:	Time arrived:	
	Senior Midwife called:	Yes	No	Time called:	Time arrived:	
	Paediatrician called:	Yes	No	Time called:	Time arrived:	
	Others present: (print name)					

PROCEDURE USED TO ASSIST DELIVERY OF SHOULDERS						
			Tick	Order of procedure	Time	Performed by: (print name)
E	Evaluate for episiotomy					
L	McRoberts' manoeuvre					
P	Suprapubic pressure and routine traction *	Static:				
		Rocking:				
E	Ruben's II					
	Wood's Screw					
	Reverse Wood Screw					
R	Delivery of posterior arm					
R	Mother on all fours/other					
*Routine traction refers to the traction required for delivery of the shoulders in a normal vaginal delivery where there is no difficulty with the shoulder.						

Time of delivery of head:		**Time of delivery of body:**	
At Delivery, Head facing mother's	Left	Right	
Fetal Condition			
Weight…….kg	Apgar 1 min ……..	Apgar 5 min …….	Apgar 10 min …….
Cord Ph:	Arterial……	Venous……	
Paediatric assessment at delivery:			
Action taken if actual/suspected brachial plexus injury:			

	Yes	No
Evidence mother kept informed		
Evidence event fully documented		
Evidence Clinical Incident form (datix) completed **(attach a copy of shoulder dystocia proforma)**		
Evidence of handover from Labour Ward staff to Postnatal Ward staff		
Evidence mother offered postnatal debrief		
Evidence staff offered postnatal debrief		
Evidence report sent to Supervisor of Midwives		

Signed:	**Print Name:**