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# Management of Shoulder Dystocia

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## AUTHORSHIP, RESPONSIBILITY AND REVIEW

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### Disclaimer

**When using this document please ensure that the version is the most up to date by checking the Obstetrics & Gynaecology Guidelines on WISDOM**

**PRINTED DOCUMENTS MUST NOT BE RELIED ON**

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## Definition

Shoulder dystocia (SD) is defined as a vaginal cephalic delivery that requires additional obstetric manoeuvres to deliver the fetus after the head has delivered and gentle axial traction has failed.

Shoulder dystocia occurs when either the anterior or less commonly the posterior fetal shoulder impacts on the maternal symphysis, or sacral promontory, respectively.

There is a wide variation in the reported incidence of shoulder dystocia but occurs between 0.1% and 3% of vaginal births. The rate of SD is increasing in reported series across the world. <sup>(1-3)</sup>

## Rationale

Shoulder dystocia is a life-threatening emergency, and needs to be managed efficiently and effectively by the multi-professional maternity team to reduce neonatal hypoxia and neonatal injury

## Risk Factors

Pre-labour	Intrapartum
Previous shoulder dystocia	Prolonged first stage of labour
Macrosomia greater than 4.5kg	Secondary arrest
Diabetes mellitus	Prolonged second stage of labour
Maternal obesity	Oxytocin augmentation
Induction of labour	Assisted vaginal delivery

These are the most commonly associated antenatal and intrapartum risk factors. Previous shoulder dystocia being the most significant risk factor, increasing the baseline risk by 10 times. The RCOG Green Top Guideline recommends shared decision-making for mode of birth for women who have had a previous SD. Although certain risk factors have been identified, their predictive value is relatively low. Consequently the midwife/obstetrician must be prepared for the possibility of shoulder dystocia at all births.

## Remember!

**Majority of shoulder dystocia's are unpreventable and unpredictable and clinicians should be alert to the possibility of shoulder dystocia with any birth. All clinicians and midwives should attend mandatory annual training on PROMPT.**

## **Complications**

- Brachial Plexus injury occurs in 2-16% shoulder dystocia births. <sup>(3)</sup>
- Permanent brachial plexus injury rates are 3 per 10,000 live births in UK<sup>(3)</sup>
- Neonatal injuries – fracture of the clavicle /or humerus
- Hypoxia and stillbirth
- Maternal trauma e.g. postpartum haemorrhage and 3<sup>rd</sup> degree tears

## **Prevention of shoulder dystocia**

- Induction of labour doesn't prevent shoulder dystocia in macrosomia with no evidence of diabetes.
- Induction of labour can reduce the incidence of shoulder dystocia in gestational diabetes.
- Elective CS or vaginal delivery can be appropriate after previous shoulder dystocia. It should be shared decision between the woman and the health professional

## **Shoulder dystocia in different birth settings**

Standard management should be consistent across all settings. There is a 5-fold increase in neonatal admission after shoulder dystocia in births outside of obstetric hospital settings. <sup>(3)</sup>

For pool births, as soon as there is delay with birth of the shoulders the woman should be asked to exit the pool to confirm shoulder dystocia, and so that standard release manoeuvres can be performed safely and efficiently <sup>(1)</sup>

**Manoeuvres should not be performed in the pool, or with the woman standing up, or on the edge of the pool** <sup>(3)</sup>

## **Warning signs**

Timely management of shoulder dystocia requires prompt recognition. The birth attendant should routinely observe for:

- Difficulty with delivery of the face and chin.
- The head remaining tightly applied to the vulva or even retracting (turtle-neck sign).
- Failure of restitution of the fetal head.
- Failure of the shoulders to descend.

Routine traction in an axial direction and traction applied in line with the axis of the fetal spine. It may be used to diagnose shoulder dystocia –'Diagnostic traction' and documented but downward and any other traction should be

avoided. Subsequently, routine axial traction is ONLY applied to assess whether each manoeuvre has been successful

There is no evidence that the use of the McRoberts' manoeuvre before delivery of the fetal head prevents shoulder dystocia. Therefore, prophylactic McRoberts' positioning before delivery of the fetal head is not recommended to prevent shoulder dystocia <sup>(1)</sup>

### **Management for Shoulder Dystocia in the CLU and AMU**

Shoulder dystocia should be managed systematically using the **PROMPT Shoulder Dystocia Algorithm (see appendix 1)**.

Immediately after recognition of shoulder dystocia, call for help and declare the emergency. Note the delivery time of the fetal head and SBAR handover when the team arrives. Discourage pushing.

Fundal pressure and extensive traction of the fetal neck should **not** be used as this increase's morbidity. Ask the mother to lie flat and move her buttocks to the end of the mattress. Allocate a member of the team to support the parents and provide a running commentary to explain the actions which will also help with discussions during the debrief after birth.

McRoberts' manoeuvre is a simple, rapid and effective intervention and should be performed first.

Suprapubic pressure should be used to improve the effectiveness of the McRoberts' manoeuvre.

An episiotomy is not always necessary as it should only be performed if unable to gain access to perform internal manoeuvres.

The manoeuvres described in Appendix 1 should be carried out in order of the algorithm however if deviated the reason needs to be clearly documented on the proforma to reason not performed.

**Clinical judgement should always guide the birth attendants in the progression of procedures used. It is essential to record accurately all manoeuvres used on the PROMPT shoulder dystocia pro forma completed and filed in the woman's notes (Appendix 2).**

**All attendants must be prepared for PPH/neonatal resuscitation.**

### **Shoulder Dystocia in the Community Setting**

Manoeuvres should be carried out as described above where possible with use of the Community PROMPT Wales algorithm (see appendix 3) to allow for times

to be documented easily at the time of the emergency then fully documented later on the shoulder dystocia proforma.

Calling for emergency ambulance transfer should NOT be delayed, if the baby is born quickly and in good condition, then the woman and baby should still be transferred for paediatric assessment.

The activation of the transfer policy in any emergency situation should NEVER be delayed – these are time critical incidents.

As per the All Wales Midwifery Led Care Guidelines, all midwives must be prepared for PPH/neonatal resuscitation and follow guidelines for obstetric/ neonatal transfer to consultant led unit.

### **Last Resort Manoeuvres**

If the above manoeuvres are unsuccessful the following techniques have been described as "last resort" manoeuvres.

- **Deliberate clavicle fracture.** Direct upward pressure on the midportion of the fetal clavicle will result in fracture and reduction of shoulder-to-shoulder distance. This should be considered by the community midwife within the community setting as a last resort.
- **Zavanelli manoeuvre.** Replace the fetal head vaginally. This is usually performed under general anaesthesia. The fetal head is flexed and replaced within the vagina to allow Caesarean section to be performed. Tocolysis may be valuable in this situation. It must be noted that the maternal safety of this procedure is unknown and should only be considered as a last resort given that the fetus will have irreversible hypoxia – acidosis by this stage.
- **Symphiotomy** (partial surgical division of the maternal symphysis pubis ligament) is associated with a high incidence of serious maternal morbidity and poor neonatal outcome.

### **Shoulder dystocia and neonatal hypoxic morbidity**

Shoulder dystocia is associated with neonatal hypoxic morbidity related to the duration of the head-to-body delivery interval (HBDI). Healthcare Safety Investigation Branch (HSIB) and NHS Resolution have published a small case series where the mean HBDI was 7 minutes.<sup>(3)</sup> Therefore, the revised algorithm, has included a reminder that if a manoeuvre is unsuccessful, then move

straight on to the next action in algorithm to avoid any undue delays. (i.e avoid trying each manoeuvre for 30 seconds which has been a suggestion from some groups in the past). Hence, it is recommended to try a release manoeuvre, but if it is unsuccessful, move straight on to the next manoeuvre to avoid further delay

### **Neonatal Management**

Cord gases may be apparently normal due to total cord compression. Do not be falsely reassured by apparently normal gases. Shoulder dystocia may cause hypovolaemia in the infant due to cord compression – the neonatologist should therefore be alerted to the possibility of hypovolaemia, if an infant is slow to respond to newborn resuscitation.

Further information and recommendations for actions will be included in the next RCOG Green top Guideline.

### **Documentation**

All cases of shoulder dystocia should have a PROMPT pro forma completed (Appendix 2). This should clearly document who was present and times of arrival, manoeuvres carried out in what order and by whom. Which shoulder was the anterior shoulder at time of delivery. Documentation of manoeuvres used and the time intervals are essential. This will also assist in planning for subsequent pregnancies.

A Datix incident reporting form should also be completed.

### **Debriefing**

The woman and her birth partner(s) should be given the time as soon as possible for a health professional who was present during the emergency to explain events and answer any questions they may have. All professionals involved should also be given the opportunity for a debrief of the events.

### **Postnatal Care**

Postnatal care should take place in the most appropriate setting depending on mode of birth, woman's well-being etc. The baby should be reviewed by the paediatric team, assessing for any injuries to the baby and cord gases should be taken from the umbilical cord following delivery of the placenta. The newborn examination should be completed by a paediatrician prior to discharge home.

## **Training Requirements**

Every professional is required to attend annual PROMPT training days and regular obstetric emergency drills.

## **Auditable Standards**

- 100% compliance is required with pro forma documentation – annual audit review
- All staff should attend annual emergency training updates – PROMPT attendance >95% staff to attend annually.

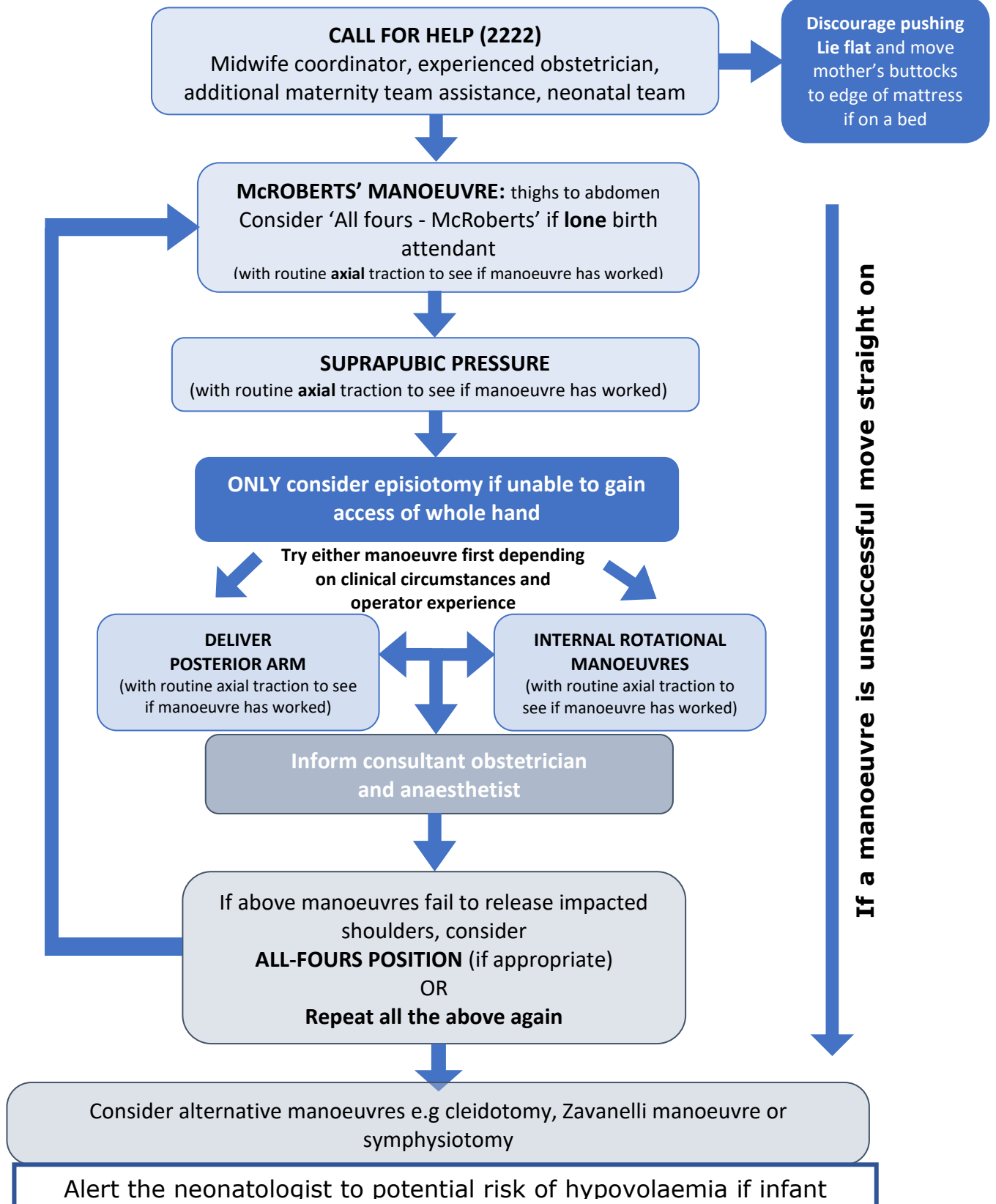
## **References**

1. PROMPT (PRactical Obstetric Multi-Professional Training) Course Manual 3<sup>rd</sup> edition 2017
2. RCOG (2012) Shoulder Dystocia, Green Top guideline no 42 <http://www.rcog.org.uk>
3. PROMPT Maternity Foundation Annual Package Update (2021)
4. Battin, M.R., et al., Shoulder dystocia, umbilical cord blood gases and neonatal encephalopathy. Aust N Z J Obstet Gynaecol, 2021



# Appendix 1: Shoulder Dystocia Algorithm

## Algorithm for the Management of Shoulder Dystocia



Baby to be reviewed by midwife/neonatologist after birth and referred for Consultant neonatal review if any concerns

## Appendix 2: Shoulder Dystocia Pro forma



### SHOULDER DYSTOCIA DOCUMENTATION

Date ..... Time .....

Person completing form .....

Designation .....

Signature .....

Mother's Name .....

Date of birth .....

Hospital Number .....

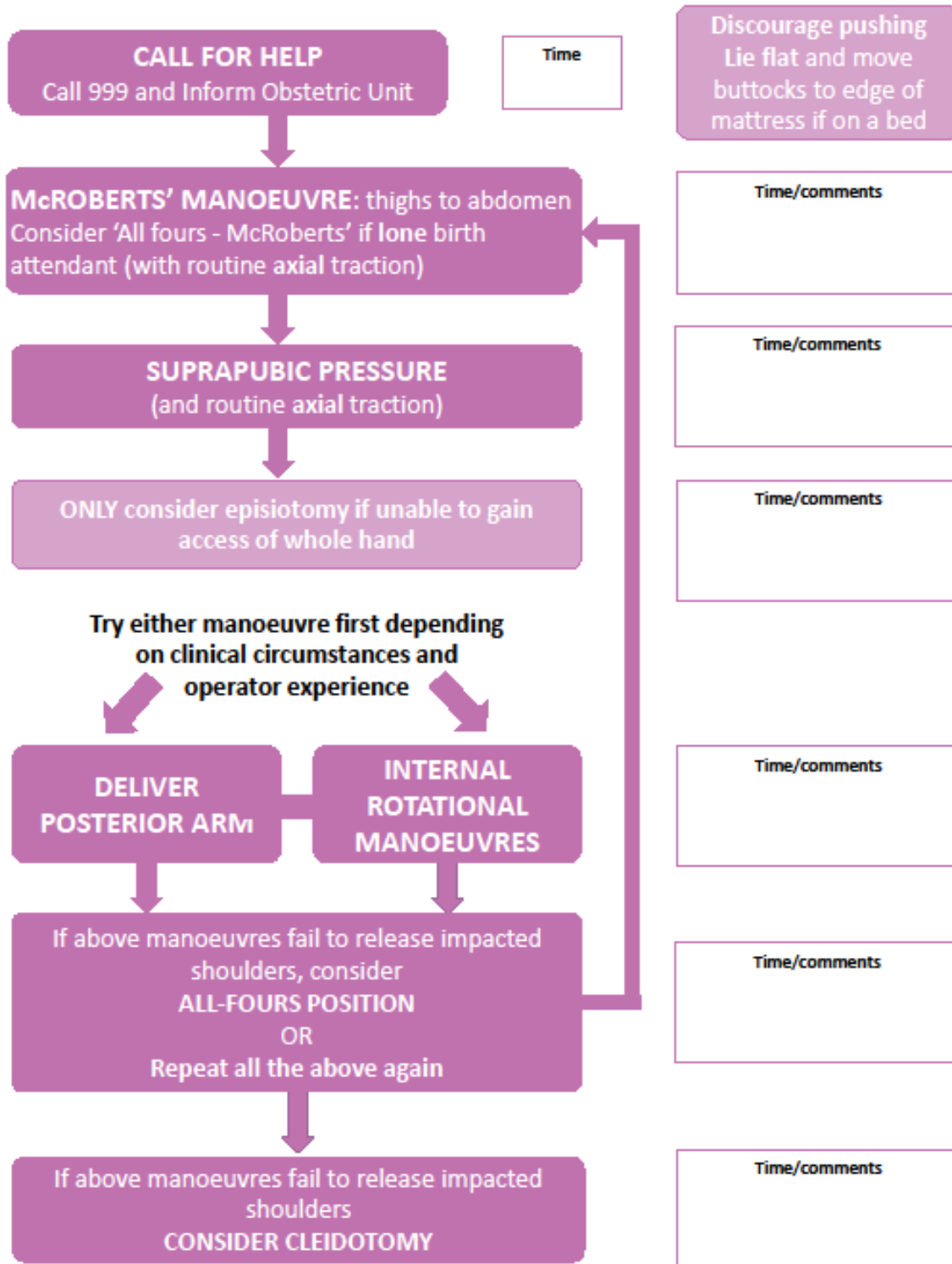
Consultant .....

Called for help at:		Emergency call via switchboard at:						
Staff present at birth of head:		Additional staff attending for birth of shoulders						
Name	Role	Name	Role	Time arrived				
Maternal position when shoulder dystocia occurred - please circle (i.e. prior to any procedures to assist)	Semi-recumbent	Lithotomy	Side-lying	All fours	Kneeling	Standing	Squatting	Other ...
Procedures used to assist birth	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 (as for normal vaginal birth)		Other -		Reason if not routine			
Other manoeuvres used								
Mode of birth of head	Spontaneous			Instrumental – vacuum / forceps				
Time of birth of head		Time of birth of baby			Head-to-body birth interval			
Fetal position during dystocia	Head facing maternal left Left fetal shoulder anterior			Head facing 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 .....		Risk incident form completed if clinical concerns		Yes	N/A	
Neonatologist called: Yes / No Time arrived: ..... Neonatologists name: .....								
Baby assessment at birth (maybe done by M/W):				If yes to any of these questions, for review and follow up by Consultant neonatologist				
Any sign of arm weakness?				Yes	No			
Any sign of potential bony fracture?				Yes	No			
Baby admitted to Neonatal Intensive Care Unit?				Yes	No			
Assessment by .....								

Version 4.2

# Appendix 3: Community Shoulder Dystocia Algorithm

## Community Algorithm for the Management of Shoulder Dystocia



Document all actions on proforma and complete DATIX Incident form



## **Appendix 4: Annual auditable standards**

The following standards will formulate the annual record keeping audit plan:-

1. Documentation of the event and completion of the proforma
2. Family debrief following birth
3. DATIX incident reporting
4. Emergency declared and emergency call instigated, Neonatal team requested to attend (Proforma for evidence)
5. Staff attendance at annual training (PROMPT staff compliance)
6. Shoulder dystocia outcome measures review
7. Annual Audit Report of Shoulder Dystocia Proforma documentation