

Royal Hospital for Women (RHW)
BUSINESS RULE
COVER SHEET



Health
 South Eastern Sydney
 Local Health District

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SUMMARY	Guidance on the recognition and immediate management of shoulder dystocia. Including order and manoeuvres employed to free impacted fetal shoulder
KEY WORDS	Shoulder Dystocia, supra-pubic pressure (Rubin I), McRoberts, Rubin II, Woods Screw, Reverse Woods Screw, Posterior Arm Delivery

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Within this document we will use the term woman, this is not to exclude those who give birth and do not identify as female. It is crucial to use the preferred language and terminology as described and guided by each individual person when providing care.

1 BACKGROUND

Shoulder dystocia is defined as a vaginal birth that requires additional obstetric manoeuvres to birth the fetus after the head has birthed. It is an obstetric emergency with a reported incidence of 1-3% of vaginal births²

The aim of this CBR is to describe the appropriate manoeuvres to free the impacted fetal shoulder in a sequential coordinated way minimising morbidity to the woman and neonate

2 RESPONSIBILITIES

2.1 Midwifery and Medical Staff: Recognition, escalation, management and debrief of shoulder dystocia

2.2 Nursing Staff: Assessment and management of neonate post birth

3 PROCEDURE

3.1 Clinical Practice

- Identify risk factors for shoulder dystocia (see appendix 1)
- Suspect shoulder dystocia:
 - if the head retracts up against the perineum (turtle sign)
 - slow birth of the face and chin
 - failure of the anterior shoulder to birth with normal lateral flexion and traction
 - failure of restitution of the fetal head
 - failure of the shoulders to descend
- Call for immediate help once shoulder dystocia is suspected or confirmed
- Activate a Rapid Response
- Request immediate paediatric attendance
- Aim for continuous monitoring of fetal heart when possible

Shoulder Dystocia

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- Ensure clear calm explanation to the woman of what is happening
- Discourage maternal pushing
- Ensure one staff member adopts the role of ‘scribe’ and records the below details, announcing the progression of time to those in attendance;
 - Time of delivery of the fetal head
 - Time of diagnosis of shoulder dystocia
 - Time at which manoeuvres performed, by whom, and the position of the neonate
 - Time of delivery of the neonate
- Avoid lateral and downward traction on the fetal head
- Release a tight nuchal cord over the fetal head if possible
- Attempt to free the impacted fetal shoulder by performing the following **external manoeuvres** for 30 seconds each in turn (see appendix 2)

McRoberts manoeuvre

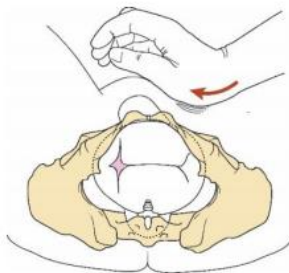
- Lay the woman flat, move to the edge of the bed, and remove her legs from stirrups if she is in lithotomy
- Flex and abduct the woman’s hips, positioning her thighs up onto her abdomen (‘knees to nipples’)
- Assist the woman to maintain this position



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Suprapubic pressure (Rubin I manoeuvre)

- Apply pressure just above the maternal symphysis on the side of the fetal back in a downward and lateral direction to push the posterior aspect of the anterior shoulder towards the fetal chest
- If continuous pressure is not successful, a “rocking motion” may be tried, as no clear difference in efficacy between continuous pressure and rocking ‘CPR like’ movement has been documented



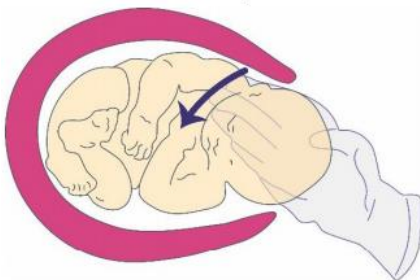
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- Escalate to obstetric consultant in attendance (if not already present)
- Consider performing an episiotomy, if possible, where internal manoeuvres are required

- Use the following described methods for **internal rotation** to disimpact the anterior shoulder. Note, the order in which manoeuvres are to be trialled will depend on the exact clinical circumstances and operator experience (refer to Appendix 1)

Rubin II manoeuvre

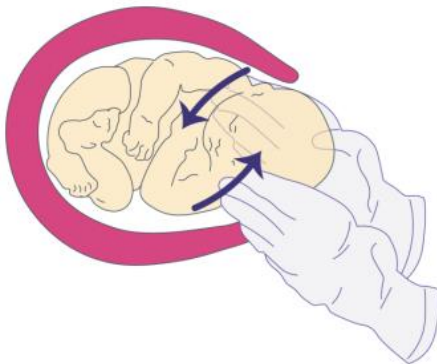
- Insert the fingers of one hand vaginally on the side of the fetal back
- Place fingers on the back of the anterior shoulder at the scapula
- Push the anterior shoulder towards the fetal chest to disimpact the shoulder from under the symphysis



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Woods Screw manoeuvre

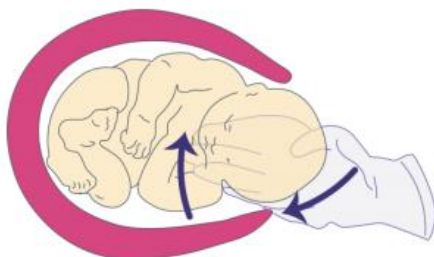
- Leave the fingers on the scapula of the anterior shoulder
- Insert opposite hands fingers and place on the anterior aspect of the posterior shoulder
- Attempt to rotate the shoulders to aid delivery



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Reverse Woods Screw

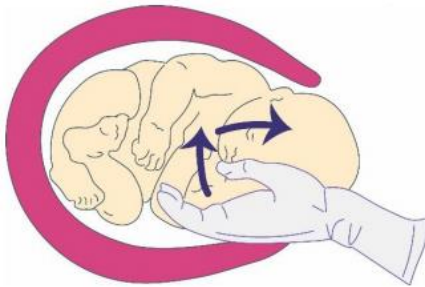
- Slide the hand that is on the scapula of the anterior shoulder down to scapula of the posterior shoulder
- Attempt to rotate the shoulders in the opposite direction to aid delivery



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Delivery of the posterior arm

- Insert a hand into the vagina posteriorly, flex the posterior arm at the elbow by applying pressure to the antecubital fossa and sweep the forearm across fetal chest until the hand is reachable
- Deliver the posterior arm and subsequently, the shoulder



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- If the posterior arm is above the pelvic brim attempt the Menticoglou Manoeuvre
 - Request an assistant apply gentle pressure to flex the fetal head towards the anterior shoulder
 - Hook the middle finger into the posterior fetal axilla and pull the posterior shoulder downwards along the curve of the sacrum
 - Grasp the posterior arm when it is reachable and deliver as described above
- Roll the woman over to an “all fours” position if possible:
 - Attempt to deliver the posterior shoulder using axial flexion
 - Consider this manoeuvre after McRoberts and before internal manoeuvres if the woman is mobile
- Note that all internal manoeuvres can be attempted in an “all fours” position
- Repeat all manoeuvres again (An experienced accoucheur may choose to do these manoeuvres in a different order at any time)
- Consider extreme manoeuvres in the event the above is not successful:
 - Cleidotomy – deliberate fracture of the fetal clavicle
 - Symphysiotomy – intentional division of the fibrous cartilage of the symphysis pubis
 - Zavanelli manoeuvre – administration of tocolytic, reinsertion of the fetal head into the vagina, followed by emergency caesarean section
- Collect cord blood gases at birth and record the results in the medical record
- Assess for maternal morbidity including perineal tears and postpartum haemorrhage following birth (as per RHW CBRs)
- Complete the Guardian K2 Shoulder Dystocia record
- Complete electronic rapid response form
- Debrief woman and family including sequelae of the events and implications for future pregnancies
- Facilitate appropriate debrief for staff members
- Provide neonatal care as per the Paediatric clinicians present at birth

Shoulder Dystocia

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- Have a low threshold for Paediatric review in the postnatal period if there are concerns about humerus or clavicular injury, upper limb motor deficit, abnormal posturing or reflexes

3.2 Documentation

- Medical Record
- Guardian K2 shoulder dystocia record

3.3 Education Notes

- Over the past 35 years there has been a significant improvement in the identification, management and outcomes (low apgars, injuries, HIE) associated with shoulder dystocia⁹
- Regular simulations and team drills with a manikin are recommended for all midwives and doctors involved in the care of labouring women in order to practice the manoeuvres required to free a shoulder dystocia⁷. A 2022 retrospective observational study in Finland found a 55% reduction in brachial plexus birth injury, despite increased shoulder dystocia incidence, with the implementation of regular, systematic, multi-professional simulation training⁷
- There is a strong correlation with shoulder dystocia and increasing fetal birth weight⁴
- The HELPER mnemonic developed in 1991 for the Advance Life Support in Obstetrics (ALSO) course may be of assistance to clinicians. It is a structured framework for management of a shoulder dystocia¹ (see appendix 3)
- The risk of perinatal asphyxia and related injury begins to significantly increase after 5 minutes in a previously well oxygenated fetus, hence the necessity for time keeping and documentation⁴
- Perinatal morbidity from shoulder dystocia includes hypoxia, brachial plexus injury and fractures^{4,11}
- Brachial plexus injury complicated 2.3-16% of births with fewer than 10% resulting in permanent neurological dysfunction. Almost all brachial plexus injuries associated with shoulder dystocia are Erb palsies which result from the over stretching of the C5-6 nerve routes^{2,4,11}
- Maternal morbidity includes postpartum haemorrhage (PPH) and severe perineal trauma²
- There are antenatal and intrapartum risk factors associated with shoulder dystocia (see Appendix 1), although these have a low positive predictive value²
- 48% of births complicated by shoulder dystocia occur with neonates with birth weight <4kg²
- Where risk factors for shoulder dystocia have been identified, a well-documented plan for birth should be recorded in the medical record
- Senior obstetric and midwifery staff should discuss the implications for the current birth, where a woman has any history or risk of shoulder dystocia²
- There is no clear requirement to recommend elective caesarean birth routinely to women with a history of shoulder dystocia. However, factors such as the severity of any previous

neonatal or maternal injury, predicted fetal size and maternal concerns should all be considered when making plans for the next birth

- Elective caesarean birth should be considered for the following^{2,3}:
 - Estimated fetal weight of 5,000 grams or higher: without diabetes
 - Estimated fetal weight of 4,500 grams or higher: with diabetes
- One study showed that induction of labour at 37-38 weeks in macrosomic fetuses is associated with a *marginal* reduced risk of shoulder dystocia and associated morbidity compared with expectant management³
- As per RANZCOG the benefits of induction of labour before 39 weeks has to be weighed against the challenges of Ultrasound diagnosis of fetal macrosomia as well as the short and long term outcomes for babies born before 39 weeks gestation¹⁰
- Excessive force or fundal pressure are unlikely to free the impacted shoulder and may cause fetal or maternal injury²
- Routine traction in an axial direction can be used to diagnose shoulder dystocia, forceful traction should be avoided. Axial traction is traction in line with the fetal spine
- Evidence from cadaver studies suggests that lateral and downward traction, and rapidly applied traction, are more likely to cause nerve avulsion and are strongly associated with obstetric brachial plexus injury^{2,7}
- McRoberts manoeuvre straightens the lumbosacral angle, increases the relative anterior/posterior diameter of the pelvis and increases the interspinous diameter. It has a reported success of up to 90%⁸
- Rubins I manoeuvre is aimed to reduce the diameter of the fetal shoulders and rotate the anterior shoulder into the oblique diameter^{1,2,5}
- The use of episiotomy will not aid the disimpaction of the shoulder as the obstruction is bony, however it may assist with access to facilitate internal manoeuvres
- Rubins II internally adducts the fetal shoulder girdle reducing the diameter and rotating the shoulder into the oblique diameter^{1,2,5}
- Removing the posterior arm reduces the bisacromial diameter allowing the fetus to drop into the sacral hollow therefore freeing the impaction. However, grasping and pulling on the posterior arm risks fractures of the humerus^{1,2,5}
- The “all fours” position is a safe, rapid and effective technique for the reduction of shoulder dystocia with the pelvic diameters increasing from the semi-recumbent position. The true obstetrical conjugate increases by as much as 10mm and the sagittal measurement of the pelvic outlet increases up to 20mm^{4,5}
- Following any shoulder dystocia, counselling the woman about the event and the 15% recurrence risk is important

3.4 Implementation, communication and education plan

This revised CBR will be distributed to all medical, nursing and midwifery staff via @health email. The CBR will be discussed at ward meetings, education and patient quality and safety meetings. Education will occur through in-services, open forum

and local ward implementation strategies to address changes to practice. The CBR will be uploaded to the CBR tab on the intranet and staff are informed how to access

3.5 Related Policies/procedures

- [Second Stage of Labour – Recognition of Normal Progress and Management of Delay](#)
- [Neonatal Resuscitation at Birth](#)
- [Postpartum Haemorrhage – Prevention and Management](#)
- [Third and Fourth Degree Perineal Tears – Repair, Management and Ward Based Postnatal Care](#)
- [Obesity and Weight Gain in Pregnancy, Labour and Postpartum](#)
- [Clinical Emergency Response System \(CERS\) – Management of the deteriorating patient](#)

3.6 References

1. American Academy of Family Physicians, (2000) Advanced Life Support in obstetrics course syllabus 4th edition
2. RCOG Green Top Guideline No.42. Shoulder Dystocia 2nd edition March 2012 updated 2017
3. Induction of labour versus expectant management for large-for-date fetuses: a randomised controlled trial. Boulvain, Michel et al. The Lancet (2015), Volume 385, Issue 9987, 2600 - 2605
4. Shoulder dystocia: Incidence, mechanisms, and management strategies, S. Menticoglou. International Journal of Women's Health (2018), Volume 10, 723 – 732
5. Shoulder dystocia: prediction and management, Hill et al. Women's Health (2016), Volume 12, Issue 2, 251- 261
6. ACOG Committee on Practice Bulletins – Obstetrics. Practice Bulletin No 178 : Shoulder Dystocia. Obstet Gynaecol 2017; 129:e123. Reaffirmed 2019.
7. Impact of simulation training on the management of shoulder dystocia and incidence of permanent brachial plexus birth injury: An observation study. Kaijomaa, M., Gissler, M., Äyräs, O., Sten, A., & Grahn, P. BJOG: An International Journal of Obstetrics & Gynaecology (2023), 130(1), 70-77.
8. Does pregnancy and/or shifting positions create more room in a woman's pelvis. American Journal of Obstetrics & Gynecology. (2014), 211(6)
9. Improving neonatal outcome through practical shoulder dystocia training. Draycott T, Crofts J, Ash J, et al. Obstet Gynecol. 2008;112(1):14-20.
10. RANZCOG. Clinical Guidance Statement. Diagnosis and management of suspected fetal macrosomia. 2021
11. Prevention of brachial plexus injury-12 years of shoulder dystocia training: an interrupted time-series study. Crofts JF, Lenguerrand E, Bentham GL, et al.. BJOG. 2016;123(1):111-118.

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4 ABORIGINAL HEALTH IMPACT STATEMENT DOCUMENTATION

- Considerations for culturally safe and appropriate care provision have been made in the development of this Business Rule and will be accounted for in its implementation.
- When clinical risks are identified for an Aboriginal and/or Torres Strait Islander woman or family, they may require additional supports. This may include Aboriginal health professionals such as Aboriginal liaison officers, health workers or other culturally specific services

5 CULTURAL SUPPORT

- For a Culturally and Linguistically Diverse CALD woman, notify the nominated cross-cultural health worker during Monday to Friday business hours
- If the woman is from a non-English speaking background, call the interpreter service: NSW Ministry of Health Policy Directive PD2017 044-Interpreters Standard Procedures for Working with Health Care Interpreters.

6 REVISION AND APPROVAL HISTORY

Date	Revision No.	Approval
Reviewed and endorsed Maternity Services LOPs February 2020 Amended August 2019 – change to PACE Approved Quality & Patient Care Committee 7/7/16 Reviewed and endorsed Maternity Services LOPs group 7/6/16 Approved Quality Council (titled Shoulder Dystocia Guideline) Reviewed November 2006 Approved Quality Council 19/6/06 Endorsed Maternity Services Clinical Committee 11/4/06		
07/08/2024		Maternity CBR Committee
9.9.24	5	Endorsed RHW BRGC

Appendix 1

Risk Factors for Shoulder Dystocia ^{2,5,6}

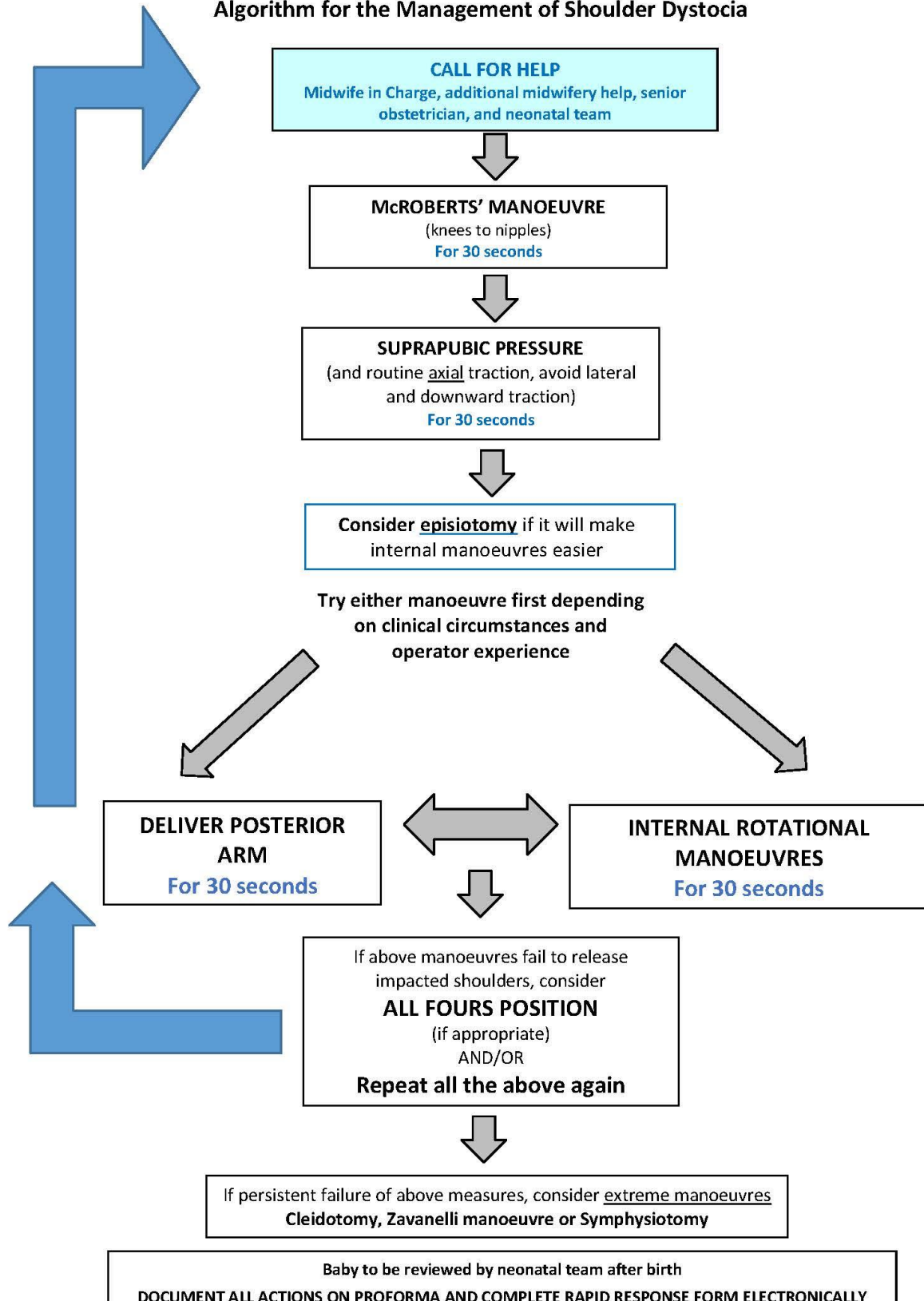
Pre-labour	Intrapartum
Previous shoulder dystocia	Prolonged first stage
Macrosomia/current EFW >4.5kg	Prolonged second stage
Diabetes Mellitus (Gestational or Pre-gestational)	Oxytocin augmentation
Maternal BMI >30	Assisted vaginal delivery
Induction of labour	

Morbidity Associated with Shoulder Dystocia

Maternal	Neonatal
OASIS	Brachial Plexus Injury
PPH	Asphyxiation
Uterine rupture	Fractured humerus
Future obstetric issues	Fractured Clavicle
Psychological effects of birth trauma	Death
Bladder damage	
Symphyseal separation	
Lateral femoral cutaneous neuropathy	
Sacroiliac joint dysfunction	

Appendix 2

Algorithm for the Management of Shoulder Dystocia



Appendix 3

HELPERR – mnemonic for shoulder dystocia'

- H** ----- Call for Help
- E** ----- Evaluate for Episiotomy
- L** ----- Legs: McRoberts Maneuvre
- P** ----- Apply external suprapubic Pressure
- E** ----- Enter: rotational manoeuvres
- R** ----- Remove the posterior arm
- R** ----- Roll the patient to her hands and knees