Approved by Quality & Patient Care Committee
19 April 2018

CAESAREAN BIRTH – MATERNAL PREPARATION AND RECEIVING THE NEONATE(S)

This LOP is developed to guide clinical practice at the Royal Hospital for Women. Individual patient circumstances may mean that practice diverges from this LOP.

1. AIM

- Woman is appropriately prepared for caesarean birth
- Appropriate booking and classification of caesarean section (CS)
- Appropriate care of neonate at caesarean birth

2. PATIENT

- Woman having caesarean birth
- Neonate(s)

3. STAFF

- Medical, nursing and midwifery staff
- Porters

4. EQUIPMENT

- Pat slide
- Hovermat
- Slide sheet
- Neonatal Resuscitation trolley - fully stocked and checked
- Personal protective equipment (PPE)
- Neonatal trolley with weighing scales
- Identification bands (ID) x 2 - maternal and neonatal
- Cot
- Cardiotocograph (CTG)/Doppler

5. CLINICAL PRACTICE

MATERNAL

<u>Elective Caesarean Birth</u>

Booking:

- Ensure woman is counselled appropriately for caesarean birth with consultation and indication clearly documented in medical record. For woman attending private obstetric care, this process will be completed and documented in private practitioner's medical record.
- Give woman the leaflet "Information for Woman having a Caesarean Birth" (Appendix 1)
- Complete Recommendation For Admission (RFA) form, including signed consent, and forward to the Booking officer. Booking will not proceed without completion of the RFA form
- Ensure woman has pre-admission clinic appointment arranged – ideally within one week of procedure
- Advise woman she will be contacted the business day prior to surgery to confirm time of admission

On Admission:

- Ensure RFA is complete and consent form is signed.
- Collect pre-operative bloods if required:
    - Full blood count if not attended since 36 weeks, or if other risk factors
    - Group and hold (<72 hours before procedure)

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- Ensure all medical records are available
- Check woman's observations
- Perform and document abdominal palpation and auscultate fetal heart rate (FHR) on admission. Confirm presentation with ultrasound if indication for CS is non-cephalic presentation. This will be performed by a medical officer
- Explain theatre procedure to woman and partner/support person
- Complete pre-operative checklist
- Clip pubic hair, ask woman to have a chlorhexidine shower (allow the chlorhexidine to remain on abdomen for one minute if possible) and wipe abdomen with aqueous chlorhexidine or appropriate alternative as per Surgical Bundle for Abdominal Surgery
- Secure ID bands x 2 on woman (red bands if known allergy) - one on ankle and one on wrist
- Give sodium citrate/ranitidine to woman as per anaesthetic orders
- Advise woman she will receive intravenous prophylactic antibiotics 30-60 minutes prior to surgery as per anaesthetic orders
- Transfer to theatre
- Introduce woman to staff members in theatre
- Repeat abdominal wipe with aqueous chlorhexidine, or appropriate alternative, once in anaesthetic bay or on operating table as per Surgical Bundle for Abdominal Surgery

Emergency Caesarean Birth

- Determine timeframe of CS as per table below - recommend the time from clinical decision to birth (decision-to-delivery interval):

Within 30 minutes (CAT 1)	cord prolapse, sustained fetal bradycardia, suspected uterine rupture, major haemorrhage, maternal collapse
Within 60 minutes (CAT 2a)	scalp pH < 7.2, lactate > 4.8, failed instrumental delivery, failure to deliver at full dilatation, pathological FHR pattern
Within 120 minutes (CAT 2b)	lack of progress with reassuring or suspicious FHR pattern, bleeding placenta praevia with stable maternal and fetal observations, booked CS in labour
Within 4 hours (CAT 3)	booked CS with ruptured membranes not in labour, severe pre-eclampsia
Add to routine list (CAT 4)	failed induction, IUGR requiring CS not in labour

In case of emergency CS - within 30 minutes (Category 1):

- Place 2222 call to switch, indicating your name, ward and need for 'emergency CS within 30 minutes'. This will then be relayed as a Rapid Response System CS 30 minutes' to:
    - Theatre
    - Anaesthetic 'outside' registrar
    - Obstetric registrar and resident medical officer(RMO)
    - Newborn Care Centre (NCC)
    - Access and Demand Manager (ADM)/After Hours Nurse Manager (AHNM)
    - Porter
- Site intravenous(IV) cannula where possible and collect pre-operative bloods, if not already taken
- Obtain verbal consent from woman and if time allows complete preoperative checklist
- Give sodium citrate/ranitidine to woman as per anaesthetic orders
- Ask woman to put on a gown if time allows

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- Transfer to allocated operating theatre on current ward bed immediately – do not stop at "red line". Theatre staff will have allocated the most appropriate anaesthetic bay depending on workload, and may involve temporary placement of woman in a holding bay until the anaesthetic bay is available
- Revisit emergency CS category once in anaesthetic bay depending on any change in clinical picture with a 'team regroup'. This will involve the obstetric medical team, anaesthetic medical team, midwife and theatre anaesthetic nurse. Any change in category must be communicated clearly to the woman and her partner/support person, and all other staff involved in the delivery
- Perform theatre checklist and anaesthetic review in anaesthetic bay. Decision for type of anaesthetic will be made by anaesthetic team after assessment of clinical picture
- Continue to monitor FHR until skin preparation is commenced. Remove fetal electrode(FE) immediately prior to commencement of surgery, if in situ

In case of emergency CS – within 60 minutes (Category 2a):

- Place 2222 call to switch, indicating your name, ward and need for 'emergency CS within 60 minutes. This will then be relayed as a Rapid Response System CS 60 minutes' to:
    - Theatre
    - Anaesthetic 'outside' registrar
    - Obstetric registrar and RMO (although they will usually already be with woman)
    - NCC
    - ADM/AHNM
    - Porter
- Site intravenous(IV) cannula where possible and collect pre-operative bloods if not already taken
- Obtain verbal consent from woman ensuring time to answer her questions and record consent in woman's medical record. Ensure ongoing discussion with the woman if clinical situation changes and record these discussions in woman's medical record
- Give sodium citrate/ranitidine to woman as per anaesthetic orders
- Ask woman to put on a gown if time allows
- Transfer to allocated operating theatre on current ward bed. The midwife caring for the woman antenatally/intrapartum MUST accompany the woman to theatre to ensure the most accurate transfer of information and provide continuity of care.
- Ensure woman is in the anaesthetic bay within 15 minutes of Clinical Emergency Response System (CERS) call. Theatre staff will have allocated the most appropriate anaesthetic bay depending on workload, and may involve temporary placement of woman in a holding bay until the allocated anaesthetic bay is available
- Revisit emergency CS category once in anaesthetic bay depending on any change in clinical picture with a 'team regroup'. This will involve the obstetric medical team, anaesthetic medical team, midwife and theatre anaesthetic nurse. Any change in category must be communicated clearly to the woman and her partner/support person, and all other staff involved in the delivery
- Perform theatre checklist and anaesthetic review in anaesthetic bay. Decision for type of anaesthetic will be made by anaesthetic team after assessment of clinical picture
- Transfer woman onto operating table within 40 minutes of CERS call and aim to start surgery within 45 minutes of CERS call
- Continue to monitor FHR until skin preparation is commenced. Remove fetal electrode(FE) immediately prior to commencement of surgery, if in situ

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All other emergency CS (Category 2b-4):

- Communicate the time from clinical decision to birth (decision-to-delivery interval) to:
  - theatre staff
  - anaesthetic staff
  - ward staff
  - NCC
  - ADM/AHNM
- Complete the Randwick Campus Operating Suite (RCOS) booking form at theatre reception with relevant information
- Explain theatre procedure to woman and partner
- Ensure consent form is signed and woman has ID bands on
- Site IV cannula and collect pre-operative bloods if not already taken
- Ask woman to put on a gown
- Complete pre-operative checklist
- Give sodium citrate/ranitidine to woman as per anaesthetic orders
- Clip pubic hair, and wipe abdomen with aqueous chlorhexidine or appropriate alternative as per Surgical Bundle for Abdominal Surgery
- Transfer to theatre and introduce to theatre staff
- Ensure urinary catheter is inserted on operating table, if not already in situ
- Ensure obstetric medical team repeat vaginal examination once woman is on operating table to confirm appropriate mode of birth, if woman is in labour
- Continue to monitor FHR until skin preparation is commenced. Remove FE immediately prior to commencement of surgery, if in situ

If an additional theatre needs to be made available after hours (1800-0700):

- Contact RHW theatre to see if there is staff for an additional theatre. If insufficient, contact the AHNM for assistance. The AHNM may advise contacting Randwick Campus Operating Suite (RCOS) reception on Ext. 20500, to allocate available theatre and staff
- Contact acute care surgeon to approve opening of an extra theatre – this needs to be undertaken by Consultant surgeon/obstetrician. The name of the duty acute care surgeon is available from RCOS reception Ext. 20500. In addition, the contact details of all acute care surgeons are in the 'roster' folder on Delivery Suite

If two emergency CS are booked at the same time:

- The consultant medical staff involved in each case need to liaise with each other regarding clinical priority

NEONATAL

- Review maternal history to assess risk factors for the neonate
- Contact appropriate paediatric team member/s for attendance. Ensure staff to neonate ratio is appropriate for multiple births
- Prepare equipment: (in the anaesthetic bay)
  - Connect the neonatal resuscitation unit to the wall oxygen/air outlets
  - Connect power cable, turning on heater and light
  - Check neonatal resuscitation trolley is stocked as per checklist
  - Check neopuff pressure:
    - Term – 25-30 cms of H_2O
    - Preterm – 20-25 cms H_2O
  - Set up equipment that has the potential for being used. E.g. laryngoscope, endotracheal tube, meconium aspirator etc

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  - Connect catheter to low flow suction on wall and turn on
  - Prepare baby equipment trolley and draw up vitamin K
  - Open sterile baby blanket on resuscitation trolley, sterile gown and gloves
  - Scrub and put on sterile gown and gloves
- Receive neonate/s from caesarean:
  - Receive neonate from surgeon and note time of birth
  - Assess neonate, keep warm and if appropriate initiate immediate skin to skin
  - Complete ID bands and label neonate
  - Administer vitamin K +/- Hepatitis B mmunization with consent
  - Ensure that the paediatric team member/midwife documents Apgar scores and resuscitation details and that you agree with this documentation
  - Return neonate to mother where appropriate for remainder of the surgery
- Check placenta
- Collect cord blood gases, cord blood for group and Coombs test (if woman rhesus negative) or any other tests if required
- Return any surgical clamps to the scout nurse
- Swab and send placenta for histopathology and other tests if required, or dispose of placenta as appropriate.
- Assist with initiation of the first breastfeed/skin to skin contact as soon as possible – ideally within the theatre complex. **The midwife must stay with the neonate at all times.**
- Transfer neonate to either NCC or Postnatal Ward accompanied by mother, partner or support person
- Ensure all documentation is complete
- Restock neonatal resuscitation trolley

6. DOCUMENTATION

MATERNAL:

- Preoperative checklist
- RCOS booking form
- Partogram
- eMaternity
- Medical Record

NEONATAL:

- Medical record
- Neonatal care pathway
- Birth Registration Forms/Centrelink Forms

7. EDUCATIONAL NOTES

- Chlorhexidine wash and wipes have been shown to reduce surgical site infections.
- The time limitations set out in CS categories are not specifically supported by evidence, however, a relationship between decision to delivery interval and the degree of fetal academia has been demonstrated
- RANZCOG recommends and endorses usage of a four-grade classification system for emergency caesarean section BUT recommends there be no specific time interval attached to the various categories of urgency of caesarean section. Each case should be managed according to the clinical evidence of urgency, with every single case being considered on its merits.
- RHW therefore endorses communicating the 'decision-to-delivery' interval for booking CS rather than a numbered category

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- Keeping a woman and her neonate(s) together may aid maternal-neonatal attachment, inimize birth trauma, reduce postnatal stress, adjustment disorder, and depression.
- Skin-to-skin contact inimizes neonatal hypothermia and aids in the establishment of breastfeeding. This involves placing the naked neonate on the mother's bare chest and covering with a warm towel.
- The midwife/registered nurse receiving the newborn is responsible for the completion of the obstetric database. Newborn Care staff will need to liaise with Delivery Suite or ADM/AHNM regarding completion of documentation.
- It is mandatory for all health professionals involved in the direct care of neonates to attend a neonatal resuscitation teaching and assessment session annually.
- Student midwives are not to attend caesarean section delivery without a registered midwife or registered nurse.
- List of relevant contact pager numbers is located on the neonatal resuscitation trolley in the Operating Theatre, and by the telephone in the anaesthetic bay in each theatre.

8. RELATED POLICIES/ PROCEDURES/CLINICAL PRACTICE GUIDELINES

- Neonatal Resuscitation
- Umbilical Cord Blood Gas Sampling
- Placenta examination and indications for referral to pathology
- Placenta removal from hospital by parents
- Breastfeeding Protect, Promotion and Support
- Intrapartum fetal heart rate monitoring
- Fetal electrode application
- Identification and security of neonate
- Preoperative skin preparation in the operating suite
- Surgical bundle for abdominal surgery
- Escalation policy – Birthing Services
- NSW Health Policy Directive PD2014_032 Prevention of Venous Thromboembolism

9. RISK RATING

- High

10. NATIONAL STANDARD

- CC – Comprehensive Care

11. REFERENCES

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- World Health Organisation. *Evidence for the Ten Steps to Successful Breastfeeding*. World Health Organisation. Division of Child Health and Development. 1998. 74-78.
- ANZCOR Guideline 13.1 – Introduction to Resuscitation of the Newborn Infant – June 2017
- Perlman JM, Wyllie J, Kattwinkel J, Wyckoff MH, Aziz K, Guinsburg R, Kim HS, Liley HG, Mildenhall L, Simon WM, Szyld E, Tamura M, Velaphi S; on behalf of the Neonatal Resuscitation Chapter Collaborators. Part 7: neonatal resuscitation: 2015 International Consensus on Cardiopulmonary Resuscitation and Emergency Cardiovascular Care Science With Treatment Recommendations. Circulation 2015;132(suppl 1): S204 – S241.
- ANZCOR Guideline 13.10 – Ethical Issues in Resuscitation of the Newborn Infant 2016

LOCAL OPERATING PROCEDURE

CLINICAL POLICIES, PROCEDURES & GUIDELINES

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- Centers for Disease Control and Prevention Guideline for the Prevention of Surgical Site Infection, 2017. S Berríos-Torres; C Umscheid; D Bratzler; et al; for the Healthcare Infection Control Practices Advisory Committee JAMA Surg. 2017;152(8):784-791. doi:10.1001/jamasurg.2017.0904
- The Royal Australian and New Zealand College of Obstetricians and Gynaecologists. College Statement Categorisation of Urgency for Caesarean, C-Obs 14 July 2015
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REVISION & APPROVAL HISTORY
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Replaced : *Caesarean Birth – Maternal Preparation and receiving the Newborn by Midwives and Nurses Guideline*
Approved Quality & Patient Safety Committee 15/10/09
Reviewed September 2009
Approved Quality Council 16/6/2003
Replaced : *Emergency Caesarean Section for the Operating Theatres*
Approved Quality & Patient Safety Committee 17/3/11
Reviewed November 2010
Approved Quality Council 20/2/06

FOR REVIEW : APRIL 2020

…./Appendix

APPENDIX 1
Information for a Woman having a Caesarean Birth

What is a caesarean birth?
A caesarean birth is an operation where an incision is made into the mother's abdomen and uterus to deliver a baby or babies. Caesarean births may be planned in advance (planned/elective) or done at short notice if complications develop with the mother or baby/babies (unplanned/emergency).

What are the main reasons a woman may undergo a caesarean birth?
A caesarean birth may be recommended if there are risks to the mother and/or risks to the baby/babies' health. The reasons will be discussed with you by your obstetric medical team when the decision is being made to have a caesarean birth. Specialist trainee doctors are supported in their clinical decision making by consultant obstetricians 24 hours a day.

Who performs the caesarean?
The caesarean operation is performed by a member of the obstetric medical team. This may be a consultant obstetrician, or specialist trainee (under appropriate supervision). You should ask your obstetric medical team as many questions as you wish.

What risks are there and how will these risks be prevented and treated?
- There are a small number of anaesthetic risks. The anaesthetist will discuss these with you at pre-admission clinic or on the day of your operation
- Wound infection: A dose of antibiotics is given through a drip before the operation to help prevent infection. However, if a wound infection does occur, this can usually be effectively treated with other antibiotics
- Injury to nearby organs: This is usually identified and repaired at the same time as the caesarean operation, but, will usually mean a longer hospital stay. Sometimes further operations are required at a later date to repair the injury and/or any complications that have arisen as a result
- Excessive blood loss: You will receive a medication through a drip at the time of your caesarean operation to help minimise blood loss. Rarely, you may require a blood transfusion.
- Deep vein thrombosis (a blood clot in your legs): A special device called a calf compressor is used in the operating theatre to help prevent this. In addition, you may need other forms of prevention such as elastic stockings or blood thinning medications after the operation. You are encouraged to get up and walk within 12-24 hours of your caesarean birth. Inform the staff in hospital, or your GP once at home, if you feel breathless, or have leg or chest pain after a caesarean birth.
- Breathing difficulties for your baby/babies is increased if you have a caesarean birth without any labour. However, this risk is small if the caesarean birth occurs after 39 weeks gestation.

When will I need to have the caesarean birth?
Most planned caesarean births are performed close to your due date, depending on the reason. The date will be booked at your 36-week antenatal clinic visit.

What do I do if I go in to labour before my booked caesarean birth date?
If you have a planned caesarean birth and have any concerns, or you go into labour beforehand, please contact the Delivery Suite on 0439 869 035. On your arrival, a midwife and a member of the obstetric medical team will assess you and if labour is confirmed and a caesarean birth is still necessary (or your preference) it will be arranged at that time. Alternatively, labour may continue if it is deemed safe and you are comfortable with this choice.

What will happen at Pre-Admission Clinic?
You will be required to attend this clinic within a week of your booked caesarean birth date.
Information that will be discussed includes:
- Past medical, surgical or anaesthetic problems
- Any allergies you have
- Any medications you are taking including herbal remedies

The date for admission for your caesarean birth will be confirmed at this clinic, and someone from the hospital will call you to confirm the time of admission on the business day before your admission.

What happens on the day of a caesarean birth?
You should not eat or drink anything for at least 6 hours prior to your planned operation.
Prior to arriving at hospital, remove all finger nail polish and artificial nails.
Before you go to theatre, the hair along your bikini line will be clipped, you will have a shower using an antiseptic wash and put on a hospital gown.

Can my partner be present at the caesarean birth and can we take photos?
You may have one support person present at the birth provided you do not require a general anaesthetic. You may wish to bring a still camera to take photos but video cameras are not permitted.

What kind of anaesthetic will be given?
A caesarean is performed under regional (spinal or epidural) anaesthesia as this is usually the safest option for you and your baby. Occasionally a general anaesthesia (going to sleep) is required. The anaesthetist will discuss your options and choices with you.

What will happen to me during the caesarean birth?
- Once you have arrived in the operating theatre a drip will be inserted into your hand/arm.
- The spinal/epidural anaesthetic is then inserted into your back.
- Once you are on the operating table, a catheter will be placed into your bladder to drain urine. Your abdomen will be washed with antiseptic solution. A sterile sheet will be hung as a screen across your chest. You are awake for the birth of your baby/babies unless you need a general anaesthetic
- An incision will then be made into your lower abdomen, which is usually along the bikini line. The incision usually measures 10-15 centimetres. The layers of abdomen underneath are opened and an incision is made into the uterus. The baby/babies is/are then delivered, sometimes with forceps.
- A midwife will receive your baby/babies in warm blankets. If your baby/babies is/are well, you are then given your baby/babies to hold - skin to skin if possible. Sometimes your baby/babies may need to be reviewed by a midwife or paediatric doctor in the room connected to your operating theatre and will be brought back to you as soon as possible.
- At the same time, the placenta is delivered through the same cut in the uterus.
- The uterus and other layers of the abdomen are then closed with dissolvable stitches. The skin is either closed with stitches or clips. Your obstetric medical team will tell you if the stitches/clips in the skin are the dissolving type or need to be removed, usually 5-7 days later.
- The operation takes approximately 1 hour.

What happens after the operation?
- After the operation you will be moved to the recovery room where a nurse will monitor your health, check for bleeding and ensure you have enough pain relief. If you and your baby/babies are well and there is a midwife available, we aim to keep you and your baby/babies together in recovery.
- Unfortunately for theatre privacy reasons, your partner/support person is not allowed in recovery. If you have an epidural catheter in place, it will be removed in recovery.
- After 30-60 minutes you and your baby/babies will be moved to the postnatal ward for ongoing care.
- The urinary catheter will be removed the next day and you will be encouraged to move around as soon as possible as this helps reduce complications.

Can I breastfeed after a caesarean birth?
Yes, as long as you and your baby/babies are well, you may be able to hold your baby/babies skin-to-skin and begin breastfeeding. This is usually in the recovery room with a midwife present, or as soon as you arrive in your room on the postnatal ward. Midwives will support you and ensure that you feel comfortable during breastfeeding.

How much time does it take to recover from a caesarean birth?
- The recovery time after a caesarean section varies for each woman, but you will usually leave hospital about 3-5 days after the birth.
- After a caesarean birth, a woman requires plenty of rest and a physiotherapist will recommend some gentle exercises to help with your recovery.
- You will be given advice and, if required, a prescription for pain relief medication and how to take it once at home.
- You should eat a high fibre diet and drink plenty of water to avoid constipation, especially if you are taking certain painkillers which may cause this.
- You should avoid heavy lifting for 6 weeks (this includes toddlers).
- Most woman can drive after 3-4 weeks.
- If you have concerns about your recovery, you must see your doctor.