CAESAREAN SECTION – role of the registered nurse / midwife
RPA Women and Babies

Related protocols include:
Resuscitation of the newborn
Thermal management
Paediatric attendance at Caesarean section
Admission protocols – postnatal ward
SSWAHS Breastfeeding Guidelines
Vitamin K policy

Aim:
To provide immediate care appropriate to the needs of the newborn and facilitate the emotional support of the mother and her partner or significant other.

Lower segment caesarean sections may be elective or emergency. Emergency caesarean sections from the delivery suite are routinely assisted by the midwife in charge of the case. Registered nurses or midwives from Newborn Care may be requested to attend if labour ward is busy, the fetus is unwell, extremely premature or a congenital abnormality is suspected.

Classification of Urgency of Caesarean section:

<table>
<thead>
<tr>
<th>Category</th>
<th>Definition</th>
<th>monitoring FHS in OT</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Emergency</td>
<td>Immediate threat to the life of the woman or fetus</td>
<td>no</td>
</tr>
<tr>
<td></td>
<td>Delivery within 15-20 minutes</td>
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<tr>
<td>2. Urgent</td>
<td>Maternal or fetal compromise which is not immediately life-threatening</td>
<td>every 10 minutes</td>
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<td></td>
<td>2 levels within this category</td>
<td>until skin prep in OT</td>
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<tr>
<td></td>
<td>delivery within 30 mins OR within 60mins</td>
<td>midwife to monitor FHS</td>
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<tr>
<td></td>
<td></td>
<td>every 5 mins or after each contraction if in 2nd stage</td>
</tr>
<tr>
<td>3. Scheduled</td>
<td>Needing delivery but there is no maternal or fetal compromise</td>
<td>every 10 mins if in labour</td>
</tr>
<tr>
<td></td>
<td>Delivery within 4 hours</td>
<td>if not in labour as per Cat 4</td>
</tr>
<tr>
<td>4. Category 4</td>
<td>At a time to suit the woman and maternity team. Delivery within 8 hours.</td>
<td>prior to transfer to OT</td>
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<tr>
<td></td>
<td></td>
<td>from LW / wards. FHS not auscultated in TPU</td>
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<td></td>
<td></td>
<td>O&amp;G staff listen FHS in OT</td>
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<tr>
<td>5. Category 5</td>
<td>Arrive in OT within 24 hours</td>
<td>as for category 4</td>
</tr>
<tr>
<td>6. Category 6</td>
<td>Arrive in OT within 72 hours</td>
<td>as for Category 4</td>
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</tbody>
</table>
If there is surgical delay of ≥ 15 minutes after delivery of anaesthetic, fetal hearts should be auscultated. If there is a RN in attendance it is the responsibility of the / obstetric team to auscultate fetal hearts - RN must inform the appropriate clinician.

1. Caesarean section - 0700 - 1700 hours Monday to Friday
A neonatal nurse / midwife from newborn care will be assigned to attend Caesarian sections (elective & emergency if LW midwife unable to attend) - page 80830. Three times / week two RNs / RMs may be assigned to the Caesarian list – page numbers are 80830 / 87209.

The RN / RM carrying page 80830 will be the first point of contact for emergency LSCS. If the RN / RM is in OT or recovery, he / she is required to page the nurse in charge of shift 80207 for assistance. The second theatre RM will then be notified on page 87209.

- Dress in theatre attire as per hospital protocols including appropriate protection (goggles and gloves)
- Check theatre list and plan day
- Check the elective caesarean cot (s) for linen, adequate supply of paperwork / bag & masks / portable O2 tank is at least ½ full
- Restock & fold baby linen in nursery
- Check & restock resuscitation trolleys in theatre 18 & theatre 19 – do not over stock
- Check MASIMO pulse oximeters are charged in anaesthetic bays theatres 18 & 19 – ensure adequate probes are available
- Take the (2) charged Philips batteries from the docking stations in the NICU and exchange with those in the monitors on the resuscitation trolleys in theatres 18 & 19
- Check fetal Doppler in theatre 18 & 19 are charged
- Print Paediatric medical roster and place one each on wall near resuscitaire in theatres 18 & 19
- Elective afternoon caesarean section lists are sometimes performed in theatre 9 or 10 – contact Theatre O&G NUM for further advice ext 55650 / page 81069

2. After hours Caesarean section - 1700 to 0700 hours Monday to Friday & at weekends / public holidays (24 hours).

2.1 Delivery ward
Midwives will normally attend the caesarean section for a woman in labour. If labour ward is busy the midwife in charge will negotiate with the nursery to attend and resuscitate the baby.

2.2 Caesarean sections from the antenatal or postnatal ward – see Section Inpatient Caesarean section (5 East 1) – all hours.

The midwife in charge will inform NARMU and the RN in charge Newborn Care. Neonatal registrar is then informed and a neonatal nurse allocated to the procedure. The ward midwife accompanies the woman to theatre and stays with her until fetal hearts are checked after insertion of regional anaesthetic. For low risk caesarean section under regional anaesthetic the midwife from 5 East 1 will remain in theatre and receive the infant.

If woman is to have a general anaesthetic, handover between the ward midwife and neonatal nurse can occur in the airlock. If regional anaesthetic is to be administered, the midwife will hand over care and relevant history to the neonatal nurse at the bedside, in theatre. Handover includes delivery of the C/S sheet, maternal and baby name tags and antenatal yellow card – as per Baby

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Neonatal RN or RM assisting at the resuscitation of baby should offer *skin to skin contact* in theatre and / or follow through and early breast feed in recovery before transfer to the postnatal ward or nursery – *this will be dependent on both maternal and fetal well being.*

*After hours the RN / RM will normally have a patient load in the NICU or labour ward and follow through to recovery will be dependent on staffing and acuity of his / her women / infants.*

**3. Low risk inpatient caesarean section (5 East 1) – all hours.**

If the fetus is singleton and term and there are no additional risk factors the caesarean section performed under regional anaesthetic is to be attended by the midwife from the ward (5 East 1). The midwife in charge of shift is to negotiate with LW if unable to attend. All at risk caesarean sections from 5 East 1 are generally attended by the RN / RM from NICU. Follow through of the family to recovery and initiation of early breast feeding is considered routine.

*NARMU must be notified (ext 58999, 57735 or 58560) to co-ordinate management if all areas are busy and resources are limited.*

The RN / RM is responsible for cleaning, restocking and confirming function of the resuscitation trolley (including air / O2 cylinders) before leaving theatres. Please notify RN in charge NICU if this is unable to be completed.

**4. Medical Attendance at LSCS**

**Elective LSCS under regional anaesthetic:** There is consistent evidence in the literature and in audit of our experience at RPAH that the need for newborn resuscitation after an elective caesarean section under regional anaesthesia is not significantly different to that after a normal vaginal delivery.

An accredited RN / RM may attend an Elective LSCS under *regional anaesthetic* in the following low risk circumstances

- The elective caesarean is within normal working hours (08:00 to 16:00)
- Gestation 37 weeks and above.
- Singleton Pregnancy
- Cephalic Presentation
- No fetal distress

An accredited theatre midwife/registered nurse notifies the Fellow/Registrar/NP/tNNP carrying the emergency pager (80126) when attending caesarean section without medical support.

*Please see protocol - Paediatric attendance at caesarean section* to see which staff is required to attend increased / high risk caesarean sections and the criteria for RM / RM accreditation. It is the responsibility of the accredited RN / RM to maintain currency of accreditation.

For ALL EMERGENCIES – ring 222 and state NEONATAL emergency in theatre ……
5. Routine paperwork & documentation

On arrival in OT - the maternal paperwork should include

- Yellow antenatal co-operation card
- Yellow caesarean section form (in patient only)
- Page of infant labels
- Front admission sheet with infant MRN – check same corresponds with details on the infant labels
- Maternal notes

All baby documentation is brought into the theatre only when the operating theatre is empty and being prepared for the relevant case, or, once the woman is in the theatre. Prior to this time the documents are to be kept in the anaesthetic bay with the woman.

- Three (3) identification bracelets (x1 maternal; x2 neonatal) for each infant with the following information:

  - The Baby’s own sticker
  - Baby of Mother’s Full Name
  - Baby’s MRN
  - Mother’s MRN (Hand printed) preceded by the letter “M”
  - Baby’s Date of Birth : Gender

One label for each infant will be inserted into an adult bracelet; the remaining two labels for each infant will be inserted into neonatal bracelets. For example if a woman is having twins she will receive two additional ID bracelets (one for each infant). When attending a multiple birth ensure paperwork and ID bracelets for each infant remains on the respective resuscitaire. Ensure each infant has been allocated a unique MRN.

Once the baby is born, the nurse/midwife is to:

1. Check the labels and confirm the maternal and infant MRNs are correct
2. Record gender / birth order and date of birth in black pen on the inserts of all three bracelets for each infant.
3. Inform the woman &/or support person that the labels are being applied.
4. Attach 2 completed identification bracelets to each infant (1 on each ankle) and attach the third completed maternal bracelet with each infant’s details to the maternal wrist, cross checking the details with the maternal identification label.
5. Confirm the labels all contain the correct spelling & information with the woman or partner.
6. The support person then accompanies the RN / RM to recovery, the postnatal ward or nursery as appropriate.

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6. Immediate care of the newborn

See resuscitation and thermal management protocols for equipment required and assessment / stabilisation of the newborn.

- Inform appropriate paediatric staff of delivery
- Check resuscitaire as per protocols
- Introduce self to mother and partner
- Review maternal / fetal history
- Explain procedure to parents eg general / epidural anaesthesia and role of support person in theatres describe noise, smell, sterile conventions and staff dress. Describe the anticipated needs of the infant after birth including skin to skin contact in theatre and recovery.
- Assist with maternal anaesthetic procedures as required
- Unexpected delays in surgical procedure and / or a precipitous fall in maternal BP will require auscultation of fetal heart rate – notify anaesthetic staff if a midwife is not in attendance
- Page neonatal RMO / registrar as appropriate to attend
- Attend full scrub as per theatre protocols – wearing goggles or glasses
- Continue support and explanation to mother and support person as appropriate
- Receive infant from obstetric staff into sterile towel
- Note time for rupture of membranes, birth & end 3rd stage
- Briefly show newborn to mother and partner / support person – describe condition of infant and congratulate family
- Place infant onto pre warmed resuscitaire with head towards clinician – towel dry and assess airway, heart rate & tone and remove wet linen.
- Palpate heart rate on chest or at base of umbilical stump
- Give gentle suction (if indicated). Prolonged suction will cause reflex bradycardia and apnoea and should be avoided if possible.
- Assess infant's need for further intervention – see resuscitation protocols
- A quick but thorough examination of the infant is essential to exclude any obvious abnormality
- Clamp cord securely and cut excess with scissors supplied by instrument nurse – return clamp (s) and scissors to scout nurse
- Fathers may cut cord if they request same – but ensure scissors are not handed to staff but are placed in kidney dish
- The infant may be weighed in theatre if appropriate
- Perform umbilical arterial gas if appropriate – any complicated / compromised birth
- Identify infant - attach 2 name bands to lower limbs – see above.
- After discussion with anaesthetist maternal skin to skin should be offered if safe to do so

OR

- Reassess infant and wrap in warm blankets - the newborn may be given to the mother / partner or support person – the RN / RM to observe infant airway, activity and colour at all times.
- Attach maternal name tag with baby's PMI sticker to mother's wrist
- At end operation and / or after mother has spent time with infant transport infant to recovery (regional anaesthetic only) or postnatal ward with partner / support person
- Only one family member may be in recovery at any one time
- Examine, double bag and transport the placenta to LW – if the parents request the placenta please see LW protocol and notify midwife in charge of LW for further
instructions – see section placental pathology below. All placentas are stored for three days post partum in the designated labour ward fridge

- Document initial newborn examination of the newborn (MR504) and document any risk factors / observations required.

7. Prevention of infant – maternal separation and initiation of early breastfeeding

7.1 Monday to Friday 0700 - 1700 hours

7.1.1 ELSCS under regional anaesthetic
Each RN / RM will facilitate skin to skin contact in theatre and follow through to recovery to initiate early breast feeding after ELSCS under regional anaesthetic. Fathers/partners/support person may accompany the mother and infant to recovery but must leave with the RN / RM in the event of an emergency or at the request of recovery staff.

After discussion with the anaesthetist maternal skin to skin should be offered in theatre if safe to do so

7.1.2 ELSCS under general anaesthetic
Women react differently to general anaesthetic and the RN / RM must assess each woman’s ability to interact with their infant immediately after birth. The woman’s partner is usually waiting in the anesthetic bay. Once the mother is extubated and ready to be transferred to recovery, the RN / midwife will escort the partner and the baby to recovery.

After GA the baby must NOT be left unattended and must be constantly supervised by the RN / RM.

7.1.3 General care
An important role of the theatre RN / RM in recovery is to prevent unnecessary maternal infant separation immediately after birth and to provide the woman having an elective LSCS with the same opportunities for early breastfeeding and infant contact as the woman birthing in labour ward.

Assistance afforded by the theatre RM / RN will vary depending on maternal choice and level of post operative comfort. Please liaise with the recovery RN before initiating maternal contact and / or breast feeding. Speak quietly and with discretion to facilitate the privacy and comfort of other patients in recovery.

Results from an audit performed in late 2009 demonstrated that approx 42% women are transferred to the PNW from recovery within 30 minutes. About 12% of women will stay longer than 60 minutes usually due to maternal complications or a shortage of postnatal beds. This information may be used as a guide to what is a reasonable time to spend with the family in recovery.

In special circumstances such as an ELSCS under regional anaesthetic for a still birth or an infant for palliative care – please discuss options with family, neonatal & obstetric team & recovery RNs.

All maternal observations and appropriate pain management will remain the responsibility of the recovery RN. All neonatal care will remain the responsibility of the nursery RN / RM. Infants in transition i.e. tachypnoea may accompany mother to recovery in the absence of other significant risk factors such as maternal insulin dependent diabetes, prematurity or meconium stained liquor.

The infant will be escorted with the mother to the postnatal ward by the attending nursery RN / RM.
Handover of mother (recovery RN) and the infant (RN / RM) will be given as per admission protocols. Document any risk factors such as maternal diabetes, growth restriction and the need for observations. Document and evaluate early breast feed or reason why follow through to recovery was not attempted for example limited resources in busy NICU / LW.

When one RM / RN is allocated to the Caesarean list (page 80830), every attempt should be made to follow through and initiate early breastfeeding in the recovery unit however this is dependent on issues such as the number of caesarean sections and level of activity in the NICU / LW.

The prevention of infant maternal separation and initiation of early breast feeding after birth is optimal practice and the evidence in support is strong. However, when there is only one RN / RM allocated to the caesarean section list, follow through of the family to recovery may be problematic and if not achieved should be documented in the maternal notes.

7.2 After hours 1700 to 0700 hours Monday to Friday & at weekends / public holidays (24 hours).

After hours the RN / RM will normally have a patient load in the NICU or labour ward and follow through to recovery will be dependent on staffing and acuity of his / her women / infants.

8. Arrival in postnatal ward / Newborn Care

The resuscitation midwife or nurse checks the infant(s) and labels with the receiving midwife or nurse as per protocol, confirming that maternal and infant MRNs / date of birth / gender / birth order on each bracelet corresponds with infant / maternal labels on the caesarean section form and / or front admission sheet. This is done in the presence of the support person if possible. The admitting RN / RM must check whether vitamin K has been administered in theatre. It is the responsibility of the postnatal midwife to administer Hepatitis B immunoglobulin / vaccination (as appropriate).

Handover should include information about
- gestational age, reason for LSCS, relevant antenatal and intra partum history, resuscitation,
- vitamin K, feeding preference, initial examination and medical orders re subsequent observation and care of newborn.

The admitting RN / RM will assess the newborn and note any signs of respiratory distress, congenital anomaly or growth restriction / wasting. Compliance with relevant protocols is based on the initial examinations at birth and on admission to the postnatal ward or nursery.

See relevant admission protocols that outline appropriate observations and investigations for the at risk newborn. Responsibility for the care of the newborn is then taken over by the receiving midwife or nurse – see postnatal admission protocols.

Print Record of Labour (ROL) and deliver same to the relevant post natal ward (ring level 8 midwives to print ROL and place in maternal notes), ext 58458; 58924; 57019.

If the infant is admitted to Newborn Care print Antenatal History (1 copy) & Record of Labour (2 copies). Retain Antenatal History (1 copy) & Record of Labour for our records and deliver second copy of Record of Labour to the relevant post natal / acute care area. A photo may be appropriate.
9. Additional documentation / investigations:

9.1 Rh Neg mother – routine

**Baby** RN / RM to prepare purple 9ml EDTA purple top tube to collect 10 ml cord blood (mandatory). RMO / accredited RN to sign Blood Bank & X Match form and order Group and Coombs. MRN labels not acceptable for Blood Bank & X Match forms / tubes – identification for both request form and specimen tube need to be hand written.

**Mother** Ask anaesthetist to collect 5ml maternal blood after baby is born. Place sample in 4ml EDTA purple top tube. RMO to sign haematology request form and order Fetal Maternal Haemorrhagic Test. If maternal blood is unable to be collected - take the request forms and inform postnatal midwives at handover.

9.2. Placental pathology

*Placental pathology is required when there is a history of*
- Risk of sepsis eg PROM > 24 hours / Maternal temperature > 37.5°C
- Preterm delivery
- Stillbirth
- Meconium stained liquor with fetal distress
- Low Apgar score – active resuscitation
- Congenital anomalies
- Multiple births
- Confirm with neonatal registrar / staff specialist obstetrician if uncertain

Take the placenta to the labour ward & examine. Record any unusual findings. Place in x 2 clear specimen bags (maternal MRN label on each) and fill out surgical pathology form using maternal MRN. Document presence of maternal infectious disease for example –
- Hepatitis B / C on placental form – biohazard labels available in LW.
- If pathology is not required, examine and place placenta in two plastic bags and place in LW fridge – discarded after 48 hours
- Routine weighing of the placenta is no longer indicated.
- Place the placenta in bottom section of designated fridge with pathology form in the plastic envelope.

9.3 Maternal HIV – Cord blood samples are required and samples are to remain at room temperature. RPA Immunology cord blood required – place 5mls cord blood in 9ml EDTA tube for HIV PCR genotype – mark attention Dr Roger Garsia. NB do not contaminate cord blood with maternal fluids on the surface of the umbilical cord – ensure all blood / liquor is removed before taking sample. In the absence of any other neonatal / obstetric risk factors – infant may go to postnatal ward. Please see HIV protocol for postnatal management of the newborn. Anti viral medications may be collected from the LW medication fridge. Placental pathology is not routinely required.

9.4 Maternal HBsAG positive – infant should be ordered hepatitis B immunoglobulin 100 units (Blood bank) and Hepatitis B Vaccine IMI 5μgs (0.5ml) within 12 hours of birth – see immunisation protocol for more information about procedure & documentation.. Each injection is to be given in a different leg. Bath infant on admission – see admission protocols. Ensure adequate removal of maternal secretions from skin prior to any IMI injection. Ensure maternal consent has been obtained for immunisation.
9.5 Fetal haemolytic disease – Rh
RN / RM to label and prepare two 4ml or 9ml EDTA purple top tubes to collect 10 – 20 mls cord blood for X match, Group and Coombs and full blood count. Size of tube will be dependent on volume of sample. An additional one ml of cord blood placed in green top tube (from nursery) for SBR. The RMO / registrar must sign Blood Bank & X Match form, full blood count and biochemistry forms. MRN labels not acceptable for Blood Bank & X Match forms / tubes – identification for this request form and related specimen tube need to be hand written.

9.6 Other special considerations
Additional documentation and investigations may be required in the presence of maternal antibodies or known congenital anomalies / metabolic disorders – please refer to appropriate protocols and ensure advanced discussion with the senior neonatal medical team.

10. Outcomes
Safe care is provided to the mother and the fetus / infant during the caesarean section procedure and immediately after birth

Prevention of unnecessary separation of the otherwise well mother and infant following ELSCS under regional anaesthesia

Neonatal airway established and maintained

Infant’s thermal management was appropriate to needs – infant warm on admission to postnatal ward or newborn care.

Documentation using Powerchart was completed

References:


Gordon A, McKechnie L, Jeffery H. Pediatric presence at cesarean section: Justified or not? American Journal of Obstetrics and Gynecology 2005; 193 (3); 599 -605


PD 2010_045 Maternity- Towards Normal Birth. Key Measures 4.5 “All maternity services undertake an annual audit of skin to skin contact within 1 hour of birth (target 90% by 2015)”

RACP Health Policy Unit, Paediatric Policy: Paediatrician attendance at caesarean sections November 2001

Surgical Services Taskforce for the NSW Health, 2010