Frimley Health
NHS Foundation Trust

Caesarean Section (including Enhanced Recovery)

Key Points

- Classification and timings of caesarean sections are as described within this guidance
- The reason for performing an emergency caesarean section is recorded in the maternity notes by the person making the decision, and a consultant is included in the decision making process
- Any reasons for delay in undertaking the CS are documented
- All women undergoing CS are given antibiotics and thromboprophylaxis (anti embolism stockings +/- low molecular weight heparin)
- All women undergoing emergency caesarean section will be monitored in the appropriate location at the specified intervals.
- The implications for future deliveries will be discussed with all women undergoing caesarean section prior to discharge and the discussion documented in the maternity notes

Version: 2.0
Date Issued: 14/12/2023
Review Date: November 2026
Key words: LSCS, CS, Caesarean, Operative delivery, C.Section, Vaginal cleansing

Abbreviations

CS	Caesarean section
CTG	Cardiotocograph
EPR	Electronic Patient Record
LW	Labour ward
TTO	To take out
WHO	World health organisation

Contents

1. Elective Caesarean Section

The decision for caesarean should be made following discussion with the woman.
The decision should be agreed by a consultant (unless vaginal birth is contraindicated, and caesarean section is the only option for delivery).
Offer all pregnant women evidence-based information and support to enable them to make informed decision about the risks and benefits of the Caesarean Section.
Ensure the women's preferences and concerns are central to the decision-making process.

Planned caesarean section should be planned between 39 - 40 weeks gestation to decrease the risk of neonatal respiratory morbidity and neonatal admission. If a caesarean section is planned below 39 weeks, document the reason why.

If a caesarean section is planned for less than 37 weeks, women should be offered steroids. Risks and benefits of the steroids at different gestational age should be discussed with the woman.

For women undergoing planned caesarean birth between 37+0 and 38+6 weeks an informed discussion should take place with the woman about the potential risks and benefits of a course of antenatal corticosteroids. Although antenatal corticosteroids may reduce admission to the neonatal unit for respiratory morbidity, it is uncertain if there is any reduction in respiratory distress syndrome, transient tachypnoea of the newborn or neonatal unit admission overall, and antenatal corticosteroids may result in harm to the neonate which includes hypoglycaemia and potential developmental delay.

Dose: 12mg betamethasone repeated 24 h later; only repeat earlier (at 12 hours) if birth likely <24 hours of first dose or 6 mg dexamethasone 12 hours apart for a total dosed of 24mg.

Maternal request caesarean section

- When a woman requests a CS with no contraindication to vaginal delivery explore, discuss and record the specific reasons for the request.
- Woman requesting a CS birth without medical or obstetric indication should be referred to the Birth choices ANC clinic following their 20-week anomaly scan, for counselling regarding indication, risks and benefits of LSCS versus SVD.
- If a woman requests a CS because she has anxiety about childbirth, offer referral to a healthcare professional with expertise in providing perinatal mental health support.
- If a woman wants to proceed with CS after discussion, offer support (including perinatal mental health) offer a planned CS after 39+ 0 weeks at a time to suit service provision.
- Document an agreed plan for if she attends in labour. Explain to the woman that, if labouring, a vaginal delivery may be inevitable especially if she is rapidly progressing or presents in advanced labour. Explain we may not be able to facilitate CS immediately due to emergency priorities and she may become fully dilated whilst awaiting an available theatre and appropriate staff.

Complete CS pathway proforma on EPIC as below:

Caesarean Birth vs Vaginal Birth – Risks (NICE 2021)

Planned caesarean section compared with planned vaginal birth for women with an uncomplicated pregnancy and no previous caesarean section.

Planned caesarean section may **reduce** the risk of the following in women:

- perineal and abdominal pain during birth and 3 days postpartum
- injury to vagina
- early postpartum haemorrhage
- obstetric shock (e.g., from haemorrhage, VTE, amniotic fluid embolism, uterine inversion or sepsis).

Planned caesarean section may **increase** the risk of the following in women:

- longer hospital stay
- hysterectomy caused by postpartum haemorrhage
- cardiac arrest

Planned caesarean section may **increase** the risk of the following in babies:

- neonatal intensive care unit admission.

This information comes from studies comparing the outcomes in women who choose a caesarean birth vs woman who choose a vaginal birth. This information is included to help you make your decision. Please note that the majority of these risks are rare outcomes.

Outcomes more likely with caesarean birth	Outcomes more likely with vaginal birth	No Difference between Caesarean and vaginal birth
Increased length of hospital stay (1-2 days longer on average)	Urinary incontinence lasting more than a year (extra 21,180/100,000 women)	Blood clots in legs/lungs
Uterine rupture in future pregnancies (extra 980/100,000 women)	Faecal incontinence lasting more than a year (extra 7,690/100,000 women)	Major haemorrhage
Hysterectomy (extra 70/100,000 women)	Vaginal tears 3rd/4th (extra 560/100,000)	Postnatal depression
Stuck placenta in future pregnancies (extra 60/100,000 women)	Pain during birth and 3 days after (increased pain scores during and 3 days after birth)	Baby admitted to neonatal unit
Maternal death (extra 20/100,000 women)		Infection in baby
Childhood obesity (extra 510/100,000 children)		Delayed speech in child

Childhood asthma (extra 310 /100,000 children) Death of child up to a year Death of baby soon after birth (extra 20/100,000 babies)		

Prior to elective caesarean section:

- The procedure must be ordered in EPIC through - Prep for procedure.
- The indication for the Caesarean section should be written in the comments box.
- Electronic consent must be obtained at the booking of the procedure.
- Women should be directed to watch the Frimley Health maternity online video on caesarean section and given the elective caesarean leaflet.
- Ensure that all high-risk patients for anaesthesia have been seen at the anaesthetic high risk ANC prior to listing them for CS.

  All women having an elective LSCS will see an anaesthetist at the preoperative visit to discuss the anaesthetic. If the woman has expressed a preference for other than a spinal anaesthetic, she should be referred to the obstetric anaesthetic clinic earlier in pregnancy to explore the options.
- The placental site should be known, particularly in the presence of a previous scar - this may require an ultrasound scan prior to surgery by a fetal medicine specialist to assess for placenta accreta.
- An antacid –omeprazole 40 mg bd x 1 day must be prescribed by the anaesthetic/obstetric team and patients advised on how to take this prior to surgery.
- Shaving BY THE PATIENT should be avoided on the day of or the days leading up to surgery (we will shave on the day in theatre if needed).
- For patients booked for malpresentation, discuss options for delivery while booking LSCS. On the day of surgery, perform a presentation scan and re- discuss options for mode of delivery if cephalic.
- If multiple pregnancy, scan fetal hearts instead of auscultation to identify different fetal heart beats.
- The fetal heart should be auscultated/ scanned after the insertion of the regional anaesthetic. This may be done for at least 10 seconds so that a clear rate may be heard. This should also be documented in the medical record.
- Apply a left lateral tilt of up to 15 degrees or appropriate uterine displacement once the woman is in a supine position on the operating table to reduce maternal hypotension.
- Vaginal cleansing and catheterisation to take place after the insertion of the regional anaesthetic, or prior to administration of a general anaesthetic.
- WHO checklist prior to surgery.

2. Emergency caesarean section

A decision for an emergency CS should always be discussed with the consultant on call, unless the delay in doing so would be life threatening to the woman or baby. Once a decision has been made to perform an emergency caesarean section, it is crucial that the urgency for the CS is documented and communicated to all team members. Classifying the urgency for delivery does not dictate the anaesthetic choice but clear communication between the obstetrician and anaesthetist as to the safest option is essential. The obstetrician making the decision should clearly document the following in the maternity notes:

- **time the decision was made**
- **indication for delivery**
- **classification of urgency of the delivery**

Classification of emergency caesarean section:

Category	Definition	Aim for decision to delivery interval…
Category 1	Immediate threat to the life of the woman / fetus	As quickly as reasonably possible
Category 2	Maternal or fetal compromise which is not immediately life-threatening	as soon as possible
Category 3	No maternal or fetal compromise but requires early delivery	When clinically appropriate for the woman and the unit.
Category 4	Elective	Delivery timed to suit woman and service provision

Use the following decision-to-delivery intervals to measure the overall performance of the obstetric unit:

- 30 minutes for category 1 CS
- 75 minutes for category 2 CS.

Use these as audit standards only and not to judge multidisciplinary team performance for any individual CS.
See flowcharts in appendices 1, 2 and 3 for individual team members' responsibilities.

3. Consultant attendance at caesarean

For the procedures listed below, the Consultant Obstetrician MUST attend in person:

Caesarean birth for major placenta praevia / abnormally invasive placenta

Caesarean birth for women with a BMI >50

Caesarean birth < 28 wks gestation

Situations in which the consultant must **ATTEND** unless the most senior doctor present has documented evidence as being signed off as competent. In these situations, the senior doctor and the consultant should decide in advance if the consultant should be **INFORMED** prior to the senior doctor undertaking the procedure.

- Caesarean birth at full dilatation
- Caesarean birth for women with a BMI >40
- Caesarean birth for transverse lie
- Caesarean birth at <32 weeks gestation
- Multiple Pregnancy
- Known large fibroids
- Transverse lie
- Two and more previous caesarean sections and known to have significant adhesions
- Fetal anomaly expected to cause difficult delivery
- Intrauterine fetal death
- Suspected/actual uterine rupture
- Previous laparotomy with high likelihood of adhesions

The above lists are not exhaustive and therefore it is recommended that prior to any shift, there should be a discussion between the consultant and the on-call team regarding any scenarios where the consultant would wish to be informed, even if their attendance may not be immediately required. These scenarios may vary according to the level of experience of the most senior doctor present.

4. Antibiotic administration

Offer all women prophylactic antibiotics at CS. Ideally these should be administered prior to skin incision (where practicable).

For recommended prophylaxis please refer to the “Adult Antimicrobial Guide” on the intranet.

5. Surgical aspects of CS

In general, the principle pertaining to surgery outlined below should be adhered to, however deviation from this can be made at the surgeon's discretion if clinically indicated, provided a clear reason is provided in the medical record.

Abdominal wall incision

CS should be performed using a transverse abdominal incision because this is associated with less postoperative pain and an improved cosmetic effect compared with a midline incision. The transverse incision of choice should be the Joel Cohen incision (a straight skin incision, 3 cm above the symphysis pubis; subsequent tissue layers are opened bluntly and, if necessary, extended with scissors and not a knife).

Opening the uterus

This is usually performed by making a transverse incision on the lower uterine segment. Do not use separate surgical knives to incise the skin and deeper tissues as it does not decrease wound infection.

Extension of the uterine incision

When there is a well-formed lower uterine segment, blunt rather than sharp extension of the uterine incision should be used because it reduces blood loss, incidence of postpartum haemorrhage and the need for transfusion at CS.

Fetal laceration

Women should be informed that fetal laceration may occur at up to 2% of deliveries.

Use of forceps

Routine use of Wrigley's forceps to deliver the fetal head should be avoided. The effect on neonatal morbidity of the routine use of forceps at caesarean birth remains uncertain.

Delayed cord clamping

Allow delayed cord clamping at all deliveries for a minimum of 1 minute if the baby's heart rate is greater than 100 beats per minute and when below 100 BPM if processes are in place to accommodate immediate neonatal resuscitation at the operating table.

Uterotonics

NICE caesarean section guideline recommends oxytocin 5 iu by slow intravenous injection for prophylaxis of PPH in the context of caesarean delivery. In elective Caesarean section, either 5 units Oxytocin **or** Carbetocin 100 micrograms should be administered by slow intravenous injection over 1 minute after delivery of the baby's shoulders. Oxytocin infusion should not be given within 4 hours of Carbetocin administration. A Cochrane review has found no statistically significant differences between carbetocin and oxytocin in terms of risk of PPH but in a statistically significant reduction in the need for further uterotonics compared with oxytocin.

Contra-indications for Carbetocin:
1. Pre-eclampsia / eclampsia
2. Epilepsy

Cautions for Carbetocin:
1. Severe cardiovascular disease: it depends on which condition, not just the severity
2. Asthma
3. Hyponatraemia

For women at increased risk of haemorrhage, it is possible that a combination of preventative measures might be superior to oxytocin alone to prevent PPH. Clinicians should consider the use of IV tranexamic acid (0.5 to 1g), in addition to oxytocin, at CS to reduce blood loss in women at increased risk of PPH.

If the uterus continues to be atonic and/or post-partum haemorrhage continues, further uterotonic agents may be used as per the postpartum haemorrhage guideline.

Check the drug chart prior to prescribing further uterotonics.

Method of placental removal:
At CS, the placenta should be removed using controlled cord traction and not manual removal as this reduces the risk of endometritis. It is essential that a digital examination of the uterine cavity is performed to check that the cavity is empty following the removal of the placenta.

Exteriorisation of the uterus:
Intra-peritoneal repair of the uterus at CS should be undertaken. Exteriorisation of the uterus is not routinely recommended because it is associated with more pain and does not improve operative outcomes such as haemorrhage and infection.

Closure of the uterus
Use single layer or double layer uterine closure in caesarean birth, depending on the clinical circumstances. Note that single layer closure does not increase the risk of postoperative bleeding or uterine rupture in a subsequent pregnancy. NICE 2021

Closure of the peritoneum:
The visceral and parietal peritoneum should not be sutured at CS as this increases operating time and the need for postoperative analgesia.
Routine use of a peritoneal drain should be avoided.

Closure of the abdominal wall:
In the rare circumstances that a midline abdominal incision is used at CS, mass closure with slowly absorbable continuous sutures should be used because this results in fewer incisional hernias and less dehiscence than layered closure.

Closure of subcutaneous tissue:
Routine closure of the subcutaneous tissue space should not be used, unless the woman has more than 2cm subcutaneous fat, because it does not reduce the incidence of wound infection.

Closure of the skin:
The method of closure and type of suture material can be left to the discretion of the individual taking into account the tissue type and body habitus of the patient.

Wound dressing

Apply a negative pressure dressing if the woman's BMI is >/=40, BMI >/=35 with diabetes, or abdominal adipose tissue, autoimmune disease, immunosuppression, history of wound infection/healing problems.

6. Complications occurring at caesarean section

Bladder injury

Should a bladder injury occur continue with delivery of the baby and suturing of the uterus, Consultant urogynaecologist to be called as a first point of contact, and if not available a senior urologist should be called to attend to supervise or perform the repair and arrange appropriate follow up. An indwelling Foley catheter will usually be left in situ for 7-10 days on free drainage.

Impacted fetal head

When caesarean section is performed at full dilatation it may be difficult to deliver the head from the pelvis. It is good practice to perform a vaginal examination in the operating theatre prior to surgery. Confirmation of fetal position and station can inform the method of delivery.
Resident Consultant to be present in theatre for full dilatation LSCS and communicate the problem to the multidisciplinary team.
First try lowering the operating table and/or standing on a step to gain extra height. The right or left hand can be used with a straight arm to reach beneath the fetal head to flex it and bring it up out of the pelvis. The Trendelenburg position may also be helpful.
Terbutaline 250 mcg s/c to be considered to relax the uterus.
An experienced assistant may be able to flex and disimpact the head from below, should use whole hand, not just tips of fingers. There is a risk of causing skull fractures.
An alternative is to deliver the baby by breech extraction, and this may require an extension of the uterine incision (J or T shape).

7. Additional considerations after delivery of the baby

Umbilical vessel pH measurement

Umbilical vessel pH levels should be taken after all category 1-3 CS and category 4 CS if there is suspected fetal compromise or a breech presentation. This allows review of fetal wellbeing and guides ongoing care of the baby. These paired cord gas samples should be taken as soon as reasonably possible after delivery of the placenta.

Thermal care for babies born by CS

Babies born by CS are more likely to have a lower temperature, and thermal care should be in accordance with good practice for thermal care of the newborn baby. Offer early skin to skin contact.

8. Thromboprophylaxis

Give according to the Trust guideline "Thromboprophylaxis and treatment of venous thromboembolism in pregnancy and puerperium". When indicated, the thromboprophylactic dose of LMWH should be given 4 hours after spinal anaesthetic or removal of epidural catheter and when there is no immediate risk of postpartum haemorrhage.

9. Recovery and monitoring after CS

All women are transferred back to labour ward or recovery for the immediate recovery period after CS until stable enough for transfer to the postnatal ward.

During the recovery period from anaesthesia, regular observations should be performed including:

- BP and Pulse
- Temperature
- Respiratory rate
- Oxygen saturation
- Level of sedation
- Lochia or blood loss
- Abdominal incision site
- Uterine size and tone
- Fluid balance
- Adequacy of analgesia

The epidural catheter should be removed from the patient before transfer to postnatal ward.

Observations should be taken and recorded on MEOWS chart:

- On admission to the postnatal ward
- Every 30 mins for 2 hrs
- Every 60 minutes for the following 2 hours (until 4 hrs following PN ward admission)
- Every 4 hrs thereafter.

During the recovery period, provided the mother is conscious and stable encourage early skin-to-skin contact between the woman and her baby and offer support to initiate breastfeeding.

See “Anaesthesia for caesarean section” for guidance on post-operative analgesia.

10. Subsequent management on the postnatal ward & Community

Eating and drinking after CS:

Women who are recovering well after CS and who do not have complications can eat and drink when they feel hungry or thirsty. For patients who have had a complicated surgical procedure, medical personnel should establish the return of bowel sounds before offering food to the patient.

Urinary catheter removal after CS:

See “Intrapartum and Postpartum Bladder Care” guideline. Note that after emergency CS, the urinary catheter should stay in for 12 hours post-operatively, unless stated otherwise.

Contraception
Contraception to be discussed in the postnatal ward rounds and about pregnancy intervals post CS and allowing for 18 months - 2 years recovery.

Debriefing the patient:
Prior to discharge from hospital the woman should be given the opportunity to discuss with healthcare professionals the events surrounding the delivery and the reasons for the CS. They should also be provided with information about birth options for any future pregnancies. Women will be reviewed by an anesthetist the day after their regional anesthetic.

Postnatal wound care
Remove honeycomb dressing after 5 days, negative pressure dressing after 28 days.
Follow surgeon's instructions for the removal of non-absorbable suture material.

12. Enhanced recovery following caesarean

Background
The core ethos of enhanced recovery is to speed up a patient's recovery after surgery and improve patient outcomes, with associated benefits for staff and healthcare systems. The aim of enhanced recovery is to optimise multiple aspects of patient care to improve recovery and so facilitate earlier discharge.

Inclusion criteria
All elective caesarean sections unless excluded by the surgeon.
Some women who have a category 3 CS may be suitable for the enhanced recovery programme and this should be considered on an individual basis.

Antenatal
Elective Caesarean section agreed:
Obstetrician to discuss early normalisation and expectation regarding discharge.

Preoperative appointment: midwife/ anaesthetist
Discuss pain relief, the possibility of nausea and vomiting, catheter removal and mobilisation.
Reaffirm expectation regarding normality and discharge.

On the day of surgery
Midwife to discuss expectations around normalisation (i.e., feeding, catheter removal) / mobilisation / discharge.
Theatre team to inform the ward of delays to the list to allow hydration (IV/Oral) if CS is delayed.

Anaesthetist
Regional anaesthesia with intrathecal opioids
Consider TAP (transverse abdominis plane) block after a GA.
Small amount of intravenous fluids at CS.
An under patient heating blanket should be used.
Anti-emetics to be administered routinely
IV down before transfer to recovery.

Obstetrician
SHO to complete discharge letter in theatre.

Midwife
Facilitate skin to skin contact in theatre because early skin-to-skin contact improves breastfeeding success.

In recovery
Baby to be fed in recovery. Encourage the woman to drink in recovery.

Patient on the ward
Encourage to eat and drink normally.
Regular analgesia and patient allocated oral opioids (oramorph regime)
Offer regular analgesia as described in the "Post-operative Analgesia for Caesarean Section" guideline.
Review after approximately 4- 6 hours to assess spinal has worn off (can be done sooner at patient request)
Remove catheter 6 hours after surgery if the spinal has worn off enough for the woman to get up and walk to the toilet.
Patient out of bed and in a chair with baby.

Day 1
Early midwifery and obstetric reviews
NIPE (newborn infant physical examination) and hearing examination to be completed
Ensure any TTOs which may be needed are available.

Subsequent time in hospital
The time of discharge is aimed at 24-36 hours after the operation. This is suitable if there are no medical or midwifery concerns and the patient has support at home. The woman should be given information about the Maternity triage and asked to attend in 24 hours if there are any concerns.

13. Communication

If there are communication issues (e.g., English as a second language, learning difficulties, blindness/partial sightedness, deafness) staff will take appropriate measures to ensure the patient (and her partner, if appropriate) understand the actions and rationale behind them.

14. Implementation Plan

The latest ratified version of this guidance will be posted on the Trust's Intranet site for all members of staff to view. A notice will be placed on the intranet and the 'In Touch' newsletter informing Maternity staff of version changes. New members of Maternity staff will be signposted to how to find and access this guidance at Induction.

15. Monitoring compliance with this guideline

Audit will be as per the maternity annual audit plan

Auditable standards for enhanced recovery
Met criteria for inclusion in the enhanced recovery programme.
Urinary catheter removed six hours after delivery.

Auditable standards:

- Classification and timings of caesarean sections are as described within this guidance
- The reason for performing an emergency caesarean section is recorded in the maternity notes by the person making the decision, and a consultant is included in the decision making process
- Any reasons for delay in undertaking the CS are documented
- All women undergoing CS are given antibiotics and thromboprophylaxis (anti embolism stockings +/- low molecular weight heparin)
- All women undergoing emergency caesarean section will be monitored in the appropriate location at the specified intervals.
- The implications for future deliveries will be discussed with all women undergoing caesarean section prior to discharge and the discussion documented in the maternity notes

This will be achieved through:

- Continuous audit of all caesarean sections presented at monthly academic half days.
- Daily reviews of all emergency caesarean sections performed in the last 24 hours.
- Monthly report and discussions of issues affecting caesarean section rates at labour ward forum and action plans developed as necessary.
- Quarterly report to the obstetric clinical governance group to monitor implementation and completion of action plans.

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Appendix 1: Category 1 Caesarean Section Flow Chart

OBSTETRICIAN	COORDINATOR	MIDWIFE	SHO	ANAESTHETIST	THEATRE STAFF
• Decision made for LSCS following discussion with woman • Informs LW coordinator of decision - stating 'category 1 caesarean section' • Informs consultant but may leave this to expedite transfer to theatre* • Initiates intrapartum fetal resuscitation measures if doesn't delay transfer to theatre – consider terbutaline • Obtains consent (written or verbal) • Continues to monitor maternal and fetal condition for any change in categorisation • Aim for theatre transfer within 5 minutes of decision • Discusses mode of anaesthetic with anaesthetist • Completes "Time Out" on WHO checklist prior to caesarean	• Calls 2222 to announce "category 1 caesarean section *(and location of patient)*" via emergency bleep system • *May be required to contact consultant on behalf of registrar in 'extreme' emergency • Ensures that the partner(s) remaining on LW is/are kept informed of progress and offered ongoing support	• Stays with woman • Prepares woman for theatre – asks her to adopt left lateral position • Goes to theatre with woman within 5 minutes of decision • On arrival in theatre reconnects CTG • Catheterisation and shave • Informs paediatrician of clinical history/indications for caesarean	▪ Offers assistance as required to prepare woman for surgery (e.g. with blood samples) ▪ Scrubs to assist surgeon	• Receives 2222 call, moves to theatre immediately • Sees woman and reviews anaesthetic needs in theatre • Inserts IV cannula and takes blood if not already taken for FBC, group & save • Agrees mode of anaesthetic with obstetrician and woman • Completes "Sign In" on WHO checklist	• Prepare theatre • Category 1 section patient will be brought straight to theatre by LW staff • Ensure WHO checklist completed

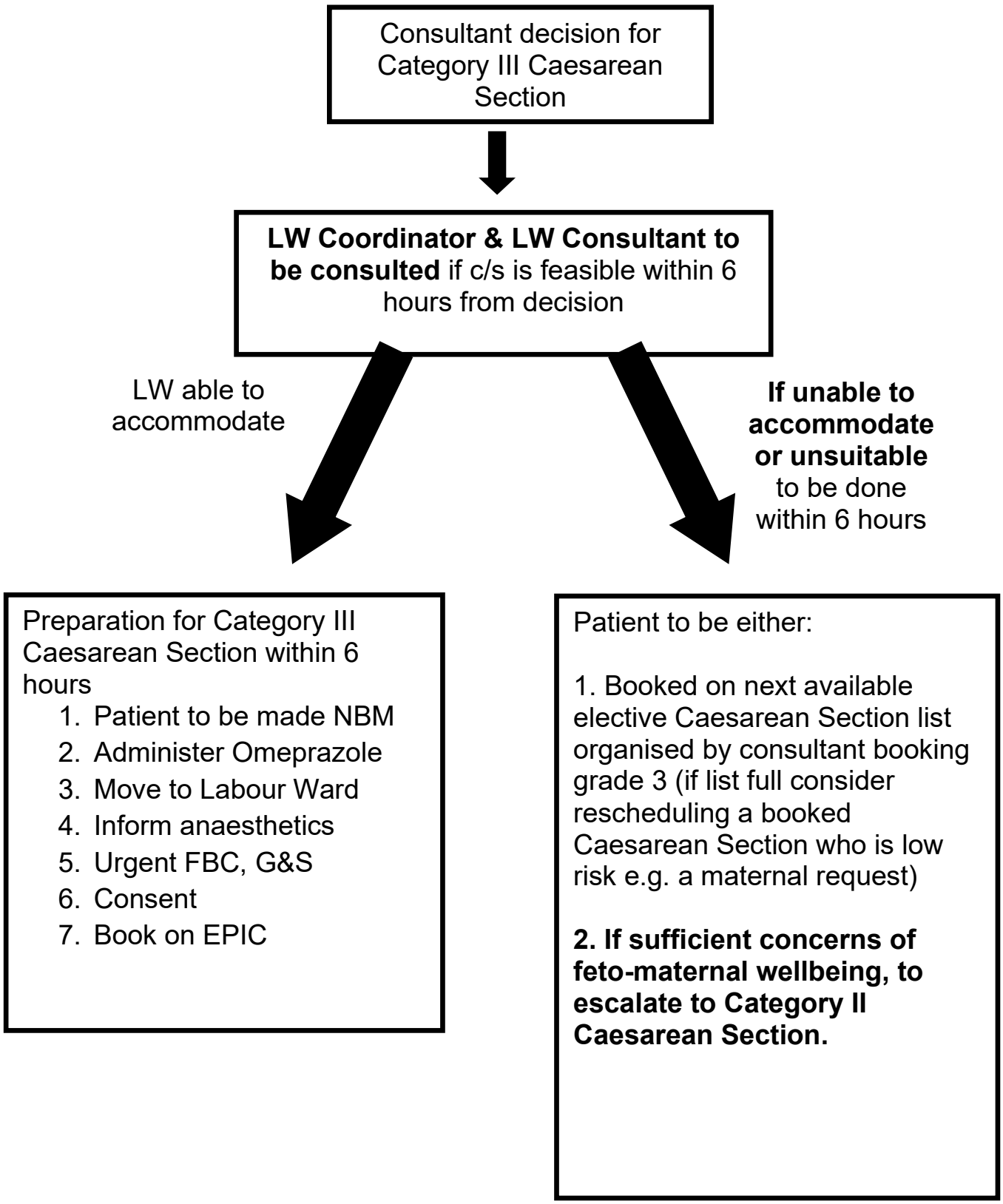
Appendix 2: Category 2 Caesarean Section Flow Chart

OBSTETRICIAN	COORDINATOR	MIDWIFE	SHO	ANAESTHETIST	THEATRE STAFF
• Decision made for caesarean following discussion with woman and documented in notes • Takes into account other patient needs and need to escalate to other staff • Informs consultant if applicable • Informs LW coordinator of decision - stating 'category 2 caesarean section' • Obtains informed written consent • Continues to monitor maternal and fetal condition for any change in categorisation • Goes to theatre with woman. Aim for theatre transfer with 10 mins of decision • Considers fetal resuscitation measures • Completes "Time Out" on WHO checklist prior to caesarean	• Calls 2222 to announce "category 2 caesarean section *(and location of patient)*" via emergency bleep system • Offers assistance to midwife as required • Ensures any birth partner remaining on LW is offered ongoing support	• Stays with the woman • Prepares woman for theatre: gown & pre-op check list • Places woman on canvas in left lateral position • Ensures effective communication • Organises partner to change • Goes to theatre with woman. Aim for theatre transfer with 10 mins of decision • On arrival in theatre reconnects CTG • Catheterisation and shave • Informs paediatrician of clinical history/indications for caesarean	▪ Offers assistance as required to prepare woman for surgery (e.g. with blood samples) ▪ Goes to theatre to scrub and assist obstetrician	• Receives 2222 call • Sees woman and reviews anaesthetic needs • Aim for theatre within 10 mins of decision • In theatre: completes anaesthetic assessment if this has not been done prior to transfer • Inserts IV cannula and takes blood if not already taken for FBC, group & save • Agrees mode of anaesthetic with obstetric registrar and woman • Completes "Sign In" on WHO checklist	• Prepare theatre • Send for woman 5 minutes after being notified of category 2 caesarean section • Ensure 'WHO checklist' completed

Appendix 3: Category 3 Caesarean Section Flow Chart

OBSTETRICIAN	COORDINATOR	MIDWIFE	SHO	ANAESTHETIST	THEATRE STAFF
• Decision made for LSCS following discussion with woman and consultant and documented in the notes • Takes into account other patient needs • Informs LW coordinator of decision - stating category 3 caesarean section. • Informs anaesthetic registrar • MDT discussion regarding timing of procedure • Obtains informed, written consent • Continues to monitor maternal and fetal condition for any change in categorisation • Attends theatre when the woman is ready for surgery • Completes "Time Out" on WHO checklist prior to caesarean	• Informs theatre of category 3 caesarean section. At FPH: complete theatre booking form, WPH: see appendix 4 • Advises theatre coordinator of anticipated timing of delivery • Informs obstetric SHO • Notifies neonatal unit & postnatal ward as appropriate • Offers assistance to midwife as required • Ensures any birth partner remaining on labour ward is offered ongoing support	• Continues to offer one-to-one care • Prepares woman for theatre: gown & pre-op check list • Places woman on canvas in left lateral position • Ensures effective communication • Organises partner to change • Goes to theatre with woman • On arrival in theatre reconnects CTG if required • Catheterisation and shave • Informs paediatrician of clinical history/indications for caesarean	▪ Attends theatre when the woman is ready for surgery ▪ Offers assistance as required ▪ Scrubs to assist surgeon	• Receives call for category 3 caesarean • Sees woman and reviews anaesthetic needs • Inserts IV cannula and takes blood if not already taken for FBC, group & save if maternity staff have been unsuccessful • Agrees mode of anaesthetic with woman • Completes "Sign In" on WHO checklist	• Prepare theatre • Send for woman as agreed with labour ward coordinator • Ensure 'WHO checklist' completed

Appendix 4: Pathway for Booking Category 3 Caesarean Section At WPH



Appendix 5: Vaginal Cleansing

1. Background

World Health Organisation recommends vaginal cleansing with povidone-iodine immediately before Caesarean section[1]. The evidence[2] indicates an overall reduction of post-Caesarean endometritis by 59%. The risk decreases by 65% in emergency Caesarean sections and by 14% in elective Caesarean sections. Additionally, there is a 36% decrease in post-operative fever, 38% decrease in post-operative wound infection and a 54% decrease in composite wound complications. Vaginal cleansing solutions, such as chlorhexidine and povidone-iodine, have very few side effects in general, with low rates of noted allergies or irritation symptoms[2].

2. Method of vaginal cleansing

- Vaginal cleansing with chlorhexidine solution should be performed before elective and emergency caesarean sections at the time of urinary catheter insertion in theatre.
- Use a swab soaked in chlorhexidine to clean in the following order: the labia majora, labia minora and urethra.
- Using a sponge holder and mounted swab soaked in chlorhexidine, insert once into the vagina and rotate for 30 seconds.
- Remove from the vagina and count swabs.
- Proceed with urinary catheter insertion.
- Document on EPIC that vaginal cleansing has been performed.

3. Contraindications

- Category 1 emergency Caesarean sections due to time restriction (cord prolapse, abruption, uterine rupture)
- Patient not consenting to the procedure.

4. Auditable standards

- Verbal consent has been obtained and documented.
- Post-Caesarean infection rate (endometritis, post-op fever and wound infection).
- Allergies/adverse reactions.

5. References

1. WHO Recommendations for Prevention and Treatment of Maternal Peripartum Infections
2. Haas DM, Morgan S, Contreras K, Kimball S. Vaginal preparation with antiseptic solution before caesarean section for preventing postoperative infections. Cochrane Database of Systematic Reviews 2020, Issue 4.

Appendix 6: Caesarean Section Consent on EPIC for information only

CONSENT FORM 1

Patient agreement to investigation or treatment

NAME
DATE OF BIRTH
HOSPITAL NUMBER

NAME OF PROPOSED PROCEDURE OR COURSE OF TREATMENT
Caesarean section

STATEMENT OF HEALTH PROFESSIONAL
I have explained the procedure to the patient. I have explained this is for safe delivery of baby and placenta through the cut in the tummy

THE INTENDED BENEFIT
Delivery of the baby and placenta

SERIOUS OR FREQUENT OCCURING RISK

Serious risks include:
- fetal injury lacerations (2.0%)
- admission to intensive care unit (0.9%)
- emergency hysterectomy (7 to 8 in every 1000 women; uncommon)
- need for further surgery at a later date (5 in every 1000 women; uncommon)
- bladder injury (1 in every 1000 women; rare)
- ureteric injury (3 in every 1000 women; rare)
- death (approximately 1 in every 12 000 women; extremely rare).

Frequent maternal risks include:
- persistent wound and abdominal discomfort in the first few months after surgery (9 in every 100 women; common)
- increased risk of repeat caesarean section for subsequent pregnancies (1 in every 4 women; extremely common)
- readmission to hospital (5 women in every 100 women; common)
- haemorrhage (5 in every 1000 women; uncommon)
- infection 6 in every 100 women (common).

Frequent fetal risks include:
- lacerations (1 to 2 in every 100 babies; common).

Any extra procedures which may be necessary during the procedure:
- BLOOD TRANSFUSION
- OTHER PROCEDURES-

1. Repair of any injuries
2. B Lynch
3. Bakri balloon

4. Hysterectomy

I have also discussed what the procedure is likely to involve, the benefits and risks of any available alternative treatments (including no treatment) and any particular concerns of this patient.

The following leaflet / tape has been provided (direct hyperlinks are not available at this time, in order to view or print linked leaflets, highlight link text.

This procedure will involve:
General anaesthesia
Regional anaesthesia
Local anaesthesia
Sedation

Signed by …….

Contact details (if the patient wishes to discuss options later)

Statement of interpreter (where appropriate)

Statement of patient
I agree ….
I understand …
I understand
I have been told

Patient name and Signature

Witness name and Signature

Full version control record

Version:	2.0
Guidelines Lead(s):	Miss Petya Doncheva, consultant Obstetrics and gynaecology WPH, Shreya Thapa ST3 WPH, Miss Zoe Jones, consultant obstetrician and gynaecologist
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Lead Director/ Chief of Service:	Miss Anne Deans
Professional midwifery advocate:	Elizabeth White
Library check completed:	19.09.2023
Ratified at:	Obstetric cross site clinical governance committee, 21st November 2023
Date Issued:	14/12/2023
Review Date:	November 2026
Pharmaceutical dosing advice and formulary compliance checked by:	Chido Mukoko 4th October 2023
Key words:	LSCS, CS, Caesarean, Operative delivery, C.Section, Vaginal cleansing

This guideline has been registered with the Trust. However, clinical guidelines are guidelines only. The interpretation and application of clinical guidelines will remain the responsibility of the individual clinician. If in doubt, contact a senior colleague or expert. Caution is advised when using guidelines after the review date.

This guideline is for use in Frimley Health NHS Foundation Trust hospitals only. Any use outside this location will not be supported by the Trust and will be at the risk of the individual using it.

Version Control Sheet

Version	Date	Guideline Lead(s)	Status	Comment
1.0	June 2019	Z. Jones	Final	Joint guideline development
1.1	April 2021	Z. Jones	Interim	Appendix (5) added for vaginal cleansing by P. Doncheva, G. David West. Approved at cross site obstetric clinical governance meeting 29th April 2021

2.0	November 2023	Ms B Sagoo Ms P Doncheva S Thapa ST3	Draft	Planned review, Caesarean section consent, Ratified at Obstetric cross site clinical governance committee, 21st November 2023

Related Documents

Document Type	Document Name
Guideline	Intrapartum and Postpartum Bladder Care
Guideline	Thromboprophylaxis and treatment of venous thromboembolism in pregnancy and puerperium
Guideline	Anaesthesia for caesarean section
Guideline	Post-operative Analgesia for Caesarean Section
Guideline	Postpartum haemorrhage
On line guide	Adult Antimicrobial Guide
Guideline	Contraception in immediate postnatal period
Guideline	Birth choices after Caesarean Birth