



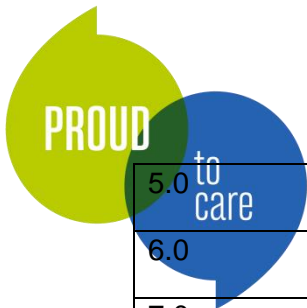
**Guideline for the management of caesarean birth**

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<b>Equality Impact Assessment</b>	N/A if clinical guideline or	Date:
<b>Version</b>	5	
<b>Status</b>	Approved	
<b>Publication date</b>	08/11/2022	
<b>Review date</b>	02/11/2025	
<b>Approval recommended by</b>	Women’s Business and Governance Meeting	Date: 21/10/2022
<b>Approved by</b>	CBU 3 Overarching Governance Meeting	Date: 02/11/202
<b>Distribution</b>	Barnsley Hospital NHS Foundation Trust – intranet  Please note that the intranet version of this document is the only version that is maintained.  Any printed copies must therefore be viewed as “uncontrolled” and as such, may not necessarily contain the latest updates and amendments	



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## 1.0 Introduction

This guideline provides information on elective and emergency caesarean birth, looking at the procedural aspects of birth by caesarean and post-operative care.

This guideline has been written in line with the NICE caesarean birth (March 2021) guidance and after benchmarking is fully compliant.

[Caesarean birth \(nice.org.uk\)](https://www.nice.org.uk)

## 2.0 Objective

To provide guidance for staff on informed choice regarding caesarean birth.

To provide procedural guidance for staff caring for women who birth their babies by caesarean either electively or in an emergency situation.

To ensure the care offered to women who birth by caesarean is evidence based and incorporates an individualised risk assessment and discussions.

## 3.0 Scope

This guideline applies to all obstetric and midwifery staff working within the maternity unit.

## 4.0 Main body of the document

### 4.1 Background Information

The decision to birth a baby by caesarean as opposed to a vaginal birth is complex and dependent upon the woman's individual circumstances, needs and choice. Women should be offered evidence-based information to enable them to make an informed choice about their mode of birth. Women should be informed that:

- 25-30% of births are by caesarean
- Some factors can increase the need for caesarean birth e.g. raised BMI or increased maternal age
- Possible indications for an emergency caesarean birth include concern regarding fetal wellbeing or delay in birth
- Caesarean birth can have an impact on the postnatal period
- There are possible implications for future pregnancies

The period of time between the decision to birth by caesarean and performing the procedure is dependent upon the degree of urgency and should be appropriate to the risk to the baby and the safety of the mother.

For the purpose of this guideline the management is split into elective and emergency caesarean births. However, caesarean birth should be categorised in terms of urgency for review and audit purposes. The following system (based on RCOG recommendations) is used:

**Category 1 (EMERGENCY)** - Immediate threat to the life of the mother or fetus, e.g. suspected uterine rupture, major placental abruption, cord prolapse, fetal hypoxia or persistent fetal bradycardia. Birth to be completed as soon as possible and within 30 minutes of making the decision.



**Category 2 (URGENT)** - Maternal or fetal compromise which is not immediately life threatening. Birth to be completed as soon as possible and within 75 minutes of making the decision.

**Category 3 (SCHEDULED)** - No maternal or fetal compromise but early birth is required.

**Category 4 (ELECTIVE)** - Birth time to suit the woman or healthcare provider.

In all cases the obstetric, midwifery, anaesthetic, theatre and neonatal team should be informed of the degree of urgency required.

In all cases consider the condition of the woman and the unborn baby when making decisions about rapid birth. Be aware that rapid birth can be harmful in certain circumstances (NICE 2021).

#### **4.2 Indications for performing an elective caesarean (category 4)**

This list is not exhaustive and each case must be reviewed on an individual basis. A consultant obstetrician should be involved in the decision-making for caesarean birth.

- Maternal or fetal conditions where the risks of a vaginal birth are greater than the risks associated with a caesarean birth
- Breech presentation where External Cephalic Version (ECV) is not recommended or where ECV has been unsuccessful or is declined. Breech presentation should be confirmed as late as possible before the caesarean by ultrasound scan.
- History of two or more caesarean births. When advising about the mode of birth after a previous caesarean birth, consider:
  - maternal preferences and priorities
  - the risks and benefits of repeat elective caesarean birth
  - the risks and benefits of elective vaginal birth after caesarean birth
  - the risk of elective caesarean birth

Inform women who have had up to and including 4 caesarean births that the risk of fever, bladder injuries and surgical injuries does not vary with elective caesarean birth, but that the risk of uterine rupture is higher for elective vaginal birth. (NICE 2021)

- Multiple pregnancy where the first twin is not cephalic

NB- Please refer to guideline for multiple pregnancy

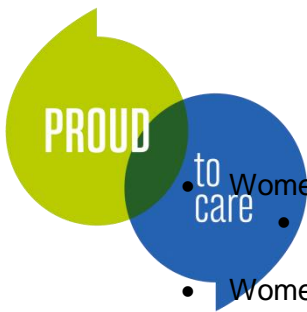
- Placenta praevia
- Morbidly adherent placenta
- Women with HIV:
  - Who are not receiving any anti-retroviral therapy (ART)
  - Who are receiving ART but have a viral load of  $\geq 400$  copies per ml. caesarean birth should be considered in women on ART with a viral load of 50-400 copies per ml.
  - Who are co-infected with Hepatitis C (for delivery management please refer to the instruction on the woman's HIV care pathway)

NB - Please refer to HIV in pregnancy guideline [HIV Positive Women In Pregnancy And Labour V3](#)

- Women with herpes simplex:
  - Women with primary genital herpes simplex virus (HSV) infection occurring in the third trimester of pregnancy as this decreases the risk of neonatal HSV infection

NB – Please refer to Herpes in pregnancy guideline [Genital Herpes In Pregnancy Neonatal Herpes Simplex Virus Infection](#)

- Women with hepatitis B:
  - Do not offer pregnant women with hepatitis B an elective caesarean birth for this reason alone, as mother-to-baby transmission of hepatitis B can be reduced if the baby receives immunoglobulin and vaccination.



- Women with hepatitis C:
  - Do not offer women who are infected with hepatitis C an elective caesarean birth for this reason alone.
- Women with a BMI > 50 alone is not an indication for elective caesarean birth (NICE 2021)
- Maternal request where no other indication for caesarean birth exists
  - If a woman requests a caesarean birth, offer joint discussions with the woman, senior midwife, obstetrician and other members of the team, if necessary, for example an anaesthetist, to explore the reasons for the request.
  - Accurate information must be provided on the risks and benefits of caesarean birth versus vaginal birth. This discussion must consider the woman's circumstances, concerns, priorities and plans for future pregnancies and be documented in the notes including the factors that are important to the woman when making the decision. Please use tables 1, 2 and 3 in appendix 2, 3 and 4 respectively to guide discussions (NICE, 2021)
  - The woman should be referred to the Birth Thoughts Clinic for further discussion
  - If the reason for requesting a caesarean birth is tokophobia or other anxiety about childbirth, a referral for mental health support should be offered

**NB** – in all cases the Consultant retains the right to decline to perform a caesarean birth with no clinical indication. If this is the case the Consultant Obstetrician will either refer the woman to a Consultant Colleague for a second opinion or refer the woman back to her General Practitioner to arrange referral to another hospital for a second opinion.

#### **4.3 Indications for performing an emergency caesarean (category 1-3)**

This list is not exhaustive and each case must be reviewed on an individual basis but will broadly encompass the following clinical scenarios:

- Cases of fetal compromise where birth is advocated and a vaginal birth is not feasible
- Cases of maternal compromise where birth is advocated and a vaginal birth is not feasible or will be detrimental to the woman's health
- Antepartum haemorrhage
- Cord prolapse or cord presentation
- Malpresentation or position in labour where vaginal birth is not feasible
- Suspected ruptured uterus
- Delay in the first or second stage of birth
- Suspected obstructed labour
- Unsuccessful induction of labour
- Unsuccessful instrumental birth
- Women who are booked for an elective caesarean birth presenting in labour and decline vaginal birth, or where vaginal birth is not suitable
- Maternal collapse
- Maternal death (Perimortem caesarean birth)

**NB** – in cases where either elective or emergency caesarean birth is advocated by clinicians the woman is entitled to decline the offer of treatment. Document evidence of informed decision making in the woman's notes.

#### **4.4 Booking an elective caesarean birth**

- The reason for birth by caesarean should be clearly documented



- Informed consent should be obtained after providing the woman with evidence-based information in a manner that respects their dignity, privacy, views and culture, while taking into consideration the clinical situation
- A date should be booked using the 'caesarean section list' diary
- A pre-operative/anaesthetic review appointment in the Antenatal Day Unit should be made for one week prior to the elective surgery date
- Enhanced recovery -
  - All women will be on the enhanced recovery programme unless deemed unsuitable.
  - Enhanced recovery will be discussed with the woman in order to allow her to prepare for surgery and arrange support at home
  - The woman will be advised that in most circumstances it is expected that they will be discharged from hospital on the evening of the next day after their caesarean birth

NICE CG132 recommends that elective caesarean birth should not routinely be carried out before 39 weeks gestation and should take place from 39 weeks gestation in order to reduce the risk of respiratory morbidity in the infant (NICE 2004& 2021, RCOG 2022). Compared with vaginal birth, infants born by caesarean birth are at greater risk of Respiratory Distress Syndrome, Transient Tachypnoea of the Newborn (TTN), and admission to the neonatal intensive care unit (NICU). The risk of respiratory morbidity at term is low (~5%) and decreases with advancing gestational age.

If birth of the baby is required prior to 37 weeks, see the guideline for preterm birth [Preterm labour - prevention and management.pdf \(trent.nhs.uk\)](https://www.trent.nhs.uk/preterm-labour-prevention-and-management.pdf)

#### **4.4a Pre-operative/anaesthetic review**

The pre-operative/anaesthetic review will involve:

- An anaesthetist who will discuss anaesthesia, pain relief and enhanced recovery. Women who are having a caesarean birth should be offered regional anaesthesia in preference to general anaesthesia, including women who have a diagnosis of placenta praevia, unless contraindicated (NICE 2021).
- An obstetrician who will ensure consent has been obtained (ideally consent will be obtained at the time of booking the surgery) and prescribe any premedication required
- A midwife or support worker who will obtain bloods (FBC, Group and Save and any other deemed necessary) and MRSA swabs.
- Obtaining a covid-19 PCR Swab
- Measuring the woman's current weight. If the woman has a BMI greater than 30, please refer to the obesity guideline [Obesity V6](#)
- General information about what to expect on the day and an opportunity to have questions answered
- Information that women should arrive at the Antenatal Postnatal Ward at 7am for morning lists and at 11am for afternoon lists
- Providing the woman an antibacterial scrub (Hydrex) to be used prior to surgery to reduce skin colonisation and promote wound healing
- Providing the women with 2 x 20mg omeprazole tablets – one to be taken at 7pm on the day prior to surgery and one at 7am on the day of surgery for morning lists, one at 11pm on the day prior to surgery and one at 11am on the day of surgery for afternoon lists
- Providing the woman with information on the different types of post-caesarean birth analgesia, so that they can make an informed choice (NICE 2021).
- Providing information that the length of hospital stay is likely to be longer after caesarean birth than after a vaginal birth





- Information on Corticosteroids if necessary – an informed discussion should take place with the women, family members or carers as appropriate, about the potential risks and benefits of a course of corticosteroids if they are undergoing elective caesarean birth between 37+0 and 38+6 weeks;
  - Although antenatal corticosteroids may reduce admission to the neonatal unit (NNU) for respiratory morbidity, it is uncertain if there is any reduction in RDS, transient tachypnoea of the newborn (TTN) or NNU admission overall, and antenatal corticosteroids may result in harm to the neonate which includes hypoglycaemia and potential developmental delay
  - If after discussion of the benefits and risks, the patient chooses to have corticosteroids it is recommended that 24mg dexamethasone phosphate is given intramuscularly in two divided doses of 12mg 24 hours apart or four divided doses of 6mg 12 hours apart (RCOG 2022) or alternatively 24mg betamethasone sodium phosphate/acetate mix given intramuscularly in two divided doses of 12mg 24 hours apart (RCOG 2022). Please see Appendix 6 for patient information leaflet
  - Women with impaired glucose tolerance or diabetes who require corticosteroids will require close monitoring and additional insulin (please refer to Diabetes in pregnancy guideline for further information)
- Liaising with the NNU if birth is to occur before 37 weeks to inform them of the planned date of birth
- Discussion of enhanced recovery. Women should be informed of the following:
  - Adequate nutrition and hydration are essential for recovery therefore on the day of surgery for morning lists, women should be advised that they can eat up until 3 AM and drink water until 6 AM
  - On the day of surgery for afternoon lists, women should be advised that they can eat until 7 AM and drink water until 11 AM
  - Following surgery, the woman is advised to eat and drink normally as soon as she feels able to
  - Early mobilisation is advocated – the woman's catheter and infusion will be removed on the morning after surgery and mobilisation encouraged
  - Taking regular pain medication will promote mobilisation and enhance recovery

#### **4.4b On the day**

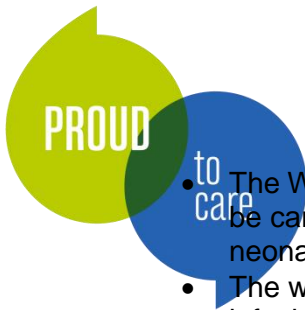
- Upon arrival to the ward, the woman and her birth partner will be greeted and taken to their allocated bed. The woman will be briefed by her allocated Midwife on what to expect before, during and after their transfer to theatre, this will include revisiting the enhanced recovery principles and benefits
- Check blood and swab results and action as necessary
- Abdominal palpation and auscultation of the fetal heart. A CTG may be performed if clinically indicated
- Remove any jewellery including any tongue piercings. Any jewellery not removed should be taped
- Measure and fit anti-embolic stockings and ensure they are prescribed
- Change the woman into a theatre gown and ideally her own dressing gown and slippers

#### **4.4c Transfer to theatre**

- The Midwife will walk with the woman and her birth partner to main theatre
- The ward staff will ensure that baby weighing scales and a cot are transferred to theatre with the woman

#### **4.4d In theatre**





- The World Health Organisation (WHO) maternity specific surgical safety checklist will be carried out on admission to theatre with all staff present, including the midwife and neonatal team (if required)
- The woman will have a cannula inserted by the Anaesthetist and an intravenous infusion will be commenced
- Sodium Citrate 30mls will be administered orally if requested by the Anaesthetist
- The woman will be prepared for a spinal anaesthetic unless contraindicated
- A Catheter will be inserted once the spinal anaesthetic is effective
- Auscultation and documentation of the fetal heart will occur following the insertion of the spinal anaesthetic and prior to commencing the procedure
- A stop moment will be included in the WHO checklist and should take place prior to knife to skin
- Timing of knife to skin, knife to uterus and delivery of the baby will be recorded
- The surgeon will document on the pre-operative notes that the woman is suitable for enhanced recovery unless it is contra-indicated
- Oxytocin 5 IU by slow intravenous injection should be offered to encourage contraction of the uterus and to decrease blood loss (NICE 2021)
- Women's preferences for the birth, such as music playing in theatre, lowering the screen to see the baby born, or silence so that the mother's voice is the first the baby hears, should be accommodated where possible
- Unless contraindicated delayed cord clamping will be performed at delivery
- The baby will be placed skin to skin as early as possible and feeding method supported. Early skin-to-skin contact between the woman and her baby should be encouraged and facilitated in line with the woman's wishes.

#### **4.5 Emergency caesarean birth (category 1-3)**

##### **4.5a Decision**

- The decision to perform an emergency caesarean will be agreed by the registrar and/or the consultant on-call based on clinical need
- The grading of the emergency will be confirmed once the decision is made
- Adequate explanation should be given to the woman and her partner and consent must be obtained from the woman. This consent will be written in the majority of cases however verbal consent is acceptable in extreme circumstances e.g. cord prolapse and suspected fetal compromise

##### **4.5b Pre-operative assessment**

- Once the decision has been made, inform the anaesthetist, Operating Department Practitioner (ODP), theatres and paediatric team, stating the degree of urgency

##### **4.5c Preparing for theatre**

- Obtain bloods for FBC, Group and Save. Only request cross matched blood if there is a risk of placenta praevia, abruption or low haemoglobin
- Gain IV access
- Shave area around the operation site if applicable and if the degree of urgency allows
- Remove any jewellery including any tongue piercings. Any jewellery not removed will need to be taped
- Administer Sodium Citrate 30mls orally if requested by the anaesthetist. Give other pre-medication as directed / prescribed by anaesthetist
- Transfer patient to theatre in left lateral position if indicated

##### **4.5d In theatre**

As for elective birth with the addition of:



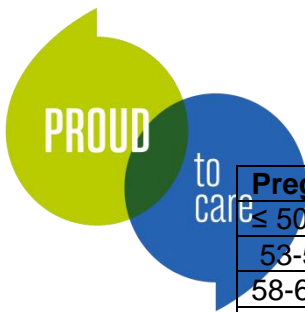
- Continuous fetal monitoring until skin preparation occurs. The midwife is responsible for monitoring the fetal heart rate until surgery begins. Ensure the fetal heart rate is recorded and documented immediately prior to commencement of the procedure
- Ensure an appropriately trained practitioner skilled in the resuscitation of newborn babies is present for caesarean birth performed under general anaesthesia, or if there is evidence of fetal compromise (NICE 2021).

#### 4.6 Antibiotic cover for all caesarean births

##### Prophylactic Antibiotics

- Women will be offered prophylactic antibiotics before skin incision. The woman should be informed that administering the antibiotics prior to the incision reduces the risk of maternal infection but has no detrimental effect on the baby
- The antibiotics used should be effective against endometritis, urinary tract and wound infections. This can occur in about 8% of women who have had a caesarean birth
- In cases of category 1 or 2 caesarean births urgent resuscitation may need to be prioritised over administering antibiotics. In this situation the anaesthetist will administer the antibiotics as soon as possible following the decision to expedite birth
- In cases of category 3 or 4 caesarean births antibiotics will be commenced by the anaesthetist in theatre prior to skin incision

BMI	Antibiotic	Penicillin allergy	MRSA positive
BMI<30 at pregnancy booking	Cefuroxime IV 1.5 g single dose plus Metronidazole IV 500 mg single dose	<u>Non-life-threatening allergy</u> Cefuroxime IV 1.5 g single dose Plus Metronidazole IV 500 mg single dose  <u>Life threatening allergy</u> Gentamicin IV 120 mg single dose Plus Clindamycin IV 600 mg single dose	Teicoplanin IV 600 mg single dose plus Gentamicin IV 2 mg/kg single dose plus Metronidazole IV 500 mg single dose
BMI>30 at pregnancy booking	Cefuroxime IV 1.5 g single dose plus Metronidazole IV 500 mg single dose <b>Plus Gentamicin IV 120mgs single dose</b>	<u>Non-life-threatening allergy</u> Cefuroxime IV 1.5 g single dose plus Metronidazole IV 500 mg single dose <b>Plus Gentamicin IV 120mg</b> <u>Life threatening allergy</u> Gentamicin IV 4mg/kg x pregnancy booking weight (maximum 400mg- see below for dosing table) Plus Clindamycin IV 600 mg single dose	Teicoplanin IV 600 mg single dose plus Gentamicin IV 4mg/kg x pregnancy booking weight (maximum 400mg-see below for dosing table) Plus Metronidazole IV 500 mg single dose



Pregnancy booking weight	Gentamicin dose (4mg/kg)
≤ 50kg to 52 kg	200mg
53-57kg	220mg
58-62 kg	240mg
63-67kg	260mg
68-72kg	280mg
73-77kg	300mg
78-82kg	320mg
83-87kg	340mg
88-92kg	360mg
93-97kg	380mg
≥98kg	400mg

#### 4.6a Anaesthetic recommendations

- Carry out induction of anaesthesia, including regional anaesthesia, for caesarean birth in theatre
- Apply a left lateral tilt of up to 15° or appropriate uterine displacement once the woman is in a supine position on the operating table to reduce maternal hypotension
- Maintain blood pressure after spinal anaesthesia using phenylephrine as an infusion +/- boluses. If the patient is bradycardic, consider ephedrine or atropine as appropriate. Aim to maintain blood pressure at 90% or more of the baseline value
- Include pre-oxygenation, rapid sequence induction and cricoid pressure in general anaesthesia for caesarean birth to reduce the risk of aspiration

#### 4.6b Obstetric recommendations

- Perform intraperitoneal repair of the uterus for caesarean birth. Routine exteriorisation of the uterus is not recommended because it is associated with more pain and does not improve operative outcomes such as haemorrhage and infection
- Do not routinely use superficial wound drains in caesarean birth as they do not decrease the incidence of wound infection or wound haematoma

#### 4.7 Thromboprophylaxis

- Post-surgical thromboprophylaxis should be offered in accordance with the Guideline for the Management of Thromboprophylaxis and the Treatment of Thromboembolic Disease in obstetric women. In most cases this will be 6 hours following spinal anaesthesia/removal of epidural anaesthesia
- Pay particular attention to women who have respiratory symptoms (such as cough or shortness of breath) or leg symptoms (such as painful swollen calf), as women who have had a caesarean birth may be at increased risk of thromboembolic disease (both deep vein thrombosis and pulmonary embolism)
- Consider the risk of thromboembolic disease when choosing the method of prophylaxis (for example, graduated stockings, hydration, early mobilisation, low molecular weight heparin). (NICE 2021)

#### 4.8 Cord Blood Samples

- Obtain paired cord blood samples at all emergency caesarean births
- Document the results and take appropriate action

#### 4.9 Post-operative care of the mother during the first 24 hours after delivery

##### 4.9a Immediate care in theatre recovery

- The woman will be recovered in the recovery area by the theatre recovery team
- All observations will be charted on a MEOWS chart and action as per the MEOWS guideline



- The operating department care plan / information sheet which includes the agreed discharge criteria will be completed
- Continuous one to one clinical observation of the woman after a general anaesthetic is maintained (by a healthcare professional with airway skills) until the woman has regained airway control, cardiorespiratory stability and is able to communicate
- A midwife will be available at all times to give the woman support and care for the newborn, they will assist in the hand over to ward staff
- After caesarean birth under a spinal or epidural anaesthetic, a healthcare professional should carry out continuous one-to-one observations of the woman until she is haemodynamically stable (for example when pulse and blood pressure have returned to baseline values)
- Skin to skin should be maintained, or initiated (if the woman wishes) if not already. Please be mindful of neonatal collapse alongside skin-to-skin contact [hsib-national-learning-report-neonatal-collapse-alongside-skin-to-skin-contact.pdf](https://www.hsib-national-learning-report-neonatal-collapse-alongside-skin-to-skin-contact.pdf) ([hsib-kqcco125-media.s3.amazonaws.com](https://www.hsib-national-learning-report-neonatal-collapse-alongside-skin-to-skin-contact.pdf))
- Assistance will be given with breast feeding if required.
- Ensure thermal care is in accordance with [Thermoregulation Of The Newborn V4](#) guideline. Babies born by caesarean birth are more likely to have a lower temperature.
- Once the recovery discharge criteria are met the woman is transferred to the appropriate clinical area
- The anaesthetist must document the postoperative pain management plan
- A handover of care will be given by the recovery team to the midwife and documented on the operating department care plan
- The surgeon must document the post operative care
- Admission to enhanced care must be considered if there have been any intraoperative complications or pre-existing conditions which would require prolonged close monitoring

#### **4.9b Care on the Antenatal and Postnatal Ward**

- After discharge from recovery, respiratory rate, heart rate, blood pressure, temperature and level of sedation will be recorded on the MOEWS Chart and the medical team should be alerted as indicated by the score chart. The frequency is as follows:
  - Every half hour for 2 hours or until stable
  - Then hourly for four hours
  - Then four hourly until transferred to Midwife Led Care (MLC)

If the maternal observations are unstable, they must be performed more frequently and medical review is recommended as per the MOEWS guideline

- The woman's pain level will be assessed alongside MOEWS and recorded in the postnatal record including administration of analgesia
- Urine output should be measured four hourly and a fluid balance chart maintained. Please refer to the postnatal care guideline for the management of women who do not pass adequate urine
- When caring for women who have had a caesarean birth who have urinary symptoms, consider possible diagnoses of: urinary tract infection; stress incontinence (occurs in about 4% of women after caesarean birth); urinary tract injury (occurs in about 1 per 1,000 caesarean births); urinary retention
- Offer women having a caesarean birth anti-emetics to reduce nausea and vomiting during caesarean birth (NICE 2021)
- For women with severe pain after caesarean birth, when other pain relief is not sufficient:
  - perform a full assessment to exclude other causes for the pain (for example, sepsis, haemorrhage, urinary retention)



- discuss with the woman that stronger pain relief medicines are available make sure the woman is aware that, if taken while breastfeeding, these medicines could increase the risk of neonatal sedation and respiratory depression.
- If the woman chooses to take stronger medicines, consider a short course of tramadol or oxycodone at the lowest effective dose. (NICE 2021)
  - Pressure ulcer care and management using the Traffic Light Pressure Ulcer Risk Assessment tool.
    - This must be undertaken on maternity patients with risk factors, to identify susceptibility to tissue damage and subsequent development of pressure ulcers
    - The risk factors are as follows:
      - Epidural analgesia/anaesthesia
      - Enhanced care
      - Prolonged immobility: Bed rest > 6 hours; Neurological disorders affecting mobility such as CVA or MS paraplegia
      - Abnormal BMI >35 or < 20
      - Prolonged surgery > 2 hours
      - Prolonged static maternal position (e.g.) lithotomy > 2 hours
      - Maternal conditions affecting circulation and/or tissue perfusion such as diabetes; Anaemia – Hb <80g/l; Major haemorrhage; Disseminated intravascular coagulation (DIC); Gross oedema
      - Medical conditions affecting general health such as: Maternal sepsis; Hyperemesis; Eating disorders
      - Prolonged urinary or faecal incontinence
    - This risk assessment must be completed as a minimum every 6 hours and if there is a significant change to the woman's condition (frequency should be assessed on an individual basis and be incorporated into the management plan)
    - Women wearing anti-embolism stockings should have these removed at least once daily and the skin, including the heels, must be assessed.
    - The assessment will be recorded on the woman's care plan, partogram, epidural form or enhanced care chart
    - Women identified as high risk will require interventions and management to minimise the risk of pressure damage development, such as:
      - Repositioning – 2 to 6 hourly (dependant on level of risk)
      - Reducing moisture by frequently changing bed linen
      - Ensuring bed linen is free from creases
      - Reducing pressure damage from equipment / devices such as catheters, oxygen masks
      - Relieving pressure on the heels
      - Where applicable, utilising pressure reducing devices such as specialist mattresses (advice and support can be obtained from the acute Tissue Viability team)
    - In the rare event a woman develops a pressure sore, please follow the Trust Policy: [Pressure Ulcer Prevention V4](#)

#### **4.9c General Cares (Enhanced recovery programme)**

The enhanced recovery programme is a model of care designed to reduce the physiological stress response and organ dysfunction caused by surgery, thereby facilitating a quicker recovery and earlier discharge from hospital. The aim is to discharge women on the evening of the day after surgery unless there are any reasons for continued hospital care. The programme is most effective for elective surgery and consists of:

- Pre-operative optimisation of the woman through rigorous pre-operative assessment, nutrition and hydration





- A standardised peri and intra-operative care pathway with careful discharge
- Postoperative hydration and nutrition
- Pain management
- Early mobilisation
- Discharge planning to include take home medication, patient information and timely baby discharge

The following actions are recommended:

- Women who are recovering well after caesarean birth and do not have complications should be encouraged to eat and drink as normal
- The woman's urinary catheter should be removed and mobilisation encouraged on the morning after the caesarean birth or earlier if the woman requests it. (Please note – do not remove the catheter less than 12 hours after the last top-up dose of regional anaesthesia)
- The timing and volume of the first void of urine after the catheter has been removed should be monitored and documented (RCOG 2020)
- Women should be encouraged to take regular analgesia for postoperative pain using paracetamol and non-steroidal anti-inflammatory drugs (if not contra-indicated). If paracetamol does not provide sufficient pain relief after caesarean birth, or non-steroidal anti-inflammatory drugs cannot be taken, consider adding dihydrocodeine to paracetamol, or changing to co-dydramol (combination preparation of paracetamol and dihydrocodeine) as an alternative to paracetamol (NICE 2021)
- Do not offer codeine or co-codamol (combination preparation of paracetamol and codeine) to women who are currently breastfeeding, this can lead to serious neonatal sedation and respiratory depression. Follow the MHRA safety advice on Codeine for analgesia: restricted use in children because of reports of morphine toxicity (NICE 2021)
- In breastfeeding women, use opioid analgesics (for example, morphine, dihydrocodeine, tramadol or oxycodone) at the lowest effective dose, for the shortest duration, and not for more than three days without close supervision (NICE 2021)
- If, after a caesarean birth, a woman is discharged home on opioids, advise the woman to contact their healthcare provider if they are concerned about their baby (for example drowsiness, breathing difficulties, constipation or difficulty feeding). (NICE 2021)
- Consider laxatives for women taking opioids, for the prevention of constipation (NICE 2021)
- Consider anti-emetics for women taking opioids, if needed for nausea and vomiting (NICE 2021)
- Oral morphine should be given if needed whilst the woman is an inpatient
- Wound care should include:
  - removing standard dressings 6 to 24 hours after the caesarean birth, Leukomed dressings should be left in place for 7 days
  - specific monitoring for fever
  - assessing the wound for signs of infection (such as increasing pain, redness or discharge), separation or dehiscence
  - encouraging the woman to wear loose, comfortable clothes and cotton underwear
  - gently cleaning and drying the wound daily
  - if needed, planning the removal of sutures or clips.
  - follow the recommendations in the NICE guideline on surgical site infections. [Surgical site infections: prevention and treatment \(nice.org.uk\)](https://www.nice.org.uk/guidance/NG137)
- Assistance should be given with hygiene needs until the woman is mobile enough to do this herself



- Assistance should be given with baby cares and feeding until the woman is fit enough not to need help
- Take home drugs should be prescribed by the medical staff conducting the surgery and obtained in a timely fashion to prevent delays in discharge
- Plans should be made for the baby's NIPE examination if not performed prior to discharge
- Offer women who are recovering well, afebrile and do not have complications after caesarean birth, discharge from hospital after 24 hours and follow up at home. This is not associated with more readmissions for babies or mothers.
- Provide the woman with postnatal information including postnatal and postoperative recovery and emergency care as well as contact numbers for the community midwife
- Offer women the opportunity to discuss with healthcare professionals the reasons for the caesarean birth, and provide both verbal and printed information about birth options for any future pregnancies. If the woman prefers, provide this at a later date
- Discuss that after a caesarean birth they are not at increased risk of depression, post-traumatic stress symptoms, pain on sexual intercourse, faecal incontinence or difficulties with breastfeeding
- Inform the woman's GP if follow-up investigations are needed after discharge from hospital (for example, a repeat full blood count if there has been a large amount of blood loss), and include details of the plan or course of action if the results are abnormal (NICE 2021)

## 5.0 Roles and responsibilities

Maternity and medical staff are responsible for:

- Providing individualised care based on the recommendations of this guideline
- Ensuring plans are in place to facilitate the enhanced recovery programme where applicable

## 6.0 Associated documents and references

Fulfilling the Potential; A better journey for patients and a better deal for the NHS. Section 1 Are you getting the messages about enhanced recovery? [Online] accessed 30/06/2014 <http://www.nhs.uk/8228.aspx>

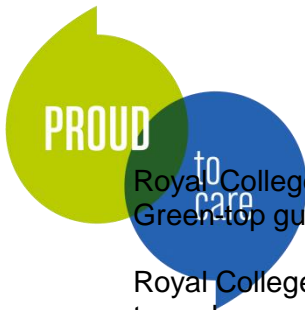
Hampshire Hospitals NHS Foundation Trust. Development and Implementation of Enhanced recovery in Obstetrics [online] <accessed> 30/06/2014 [http://www.google.co.uk/search?q=development+and+implementation+of+enhanced+recovery+in+obstetrics&hl=enGB&gbv=2&og=development+and+implementation+of+enhanced+recovery+in+obstetrics&gs\\_l=heirloom-serp.12...4000.49657.0.51313.127.35.0.58.1.6.172.3768.11j21.32.0...0...1ac.1.34.heirloom-serp..101.26.3081.Ed8K3-QCl-g](http://www.google.co.uk/search?q=development+and+implementation+of+enhanced+recovery+in+obstetrics&hl=enGB&gbv=2&og=development+and+implementation+of+enhanced+recovery+in+obstetrics&gs_l=heirloom-serp.12...4000.49657.0.51313.127.35.0.58.1.6.172.3768.11j21.32.0...0...1ac.1.34.heirloom-serp..101.26.3081.Ed8K3-QCl-g)

National Institute for Health and Clinical Excellence. (2021) NG192. Caesarean Section [online] [Caesarean birth \(nice.org.uk\)](https://www.nice.org.uk/guidance/ng192)

National Institute for innovation and Improvement. (2008) Quality Service Improvement tools: Advanced recovery Programme [online] <accessed> 30/06/2014 [http://www.institute.nhs.uk/quality\\_and\\_service\\_improvement\\_tools/quality\\_and\\_service\\_improvement\\_tools/enhanced\\_recovery\\_programme.html](http://www.institute.nhs.uk/quality_and_service_improvement_tools/quality_and_service_improvement_tools/enhanced_recovery_programme.html)

Royal College of Obstetricians and Gynaecologists. The Royal College of Anaesthetists. (2010) Good practice No. 11. Classification of urgency of Caesarean section- A Continuum of Risk





Royal College of Obstetricians and Gynaecologists.(RCOG) (2020). Assisted vaginal birth. Green-top guideline number 26. [Assisted Vaginal Birth \(Green-top Guideline No. 26\) | RCOG](#)

Royal College of Obstetricians and Gynaecologists.(RCOG) (2022). Antenatal corticosteroids to reduce neonatal morbidity and mortality. Green-top guideline number 74. [Antenatal corticosteroids to reduce neonatal morbidity and mortality \(wiley.com\)](#)

The National Sentinel Caesarean Section Audit Report RCOG Clinical Effectiveness Support Unit (2001)

## **7.0 Training and resources**

Training will be delivered as outlined in the Maternity Training Needs Analysis. This is updated on an annual basis.

## **8.0 Monitoring and audit**

Any adverse incidents relating to the guideline for the Management of caesarean birth will be monitored via the incident reporting system. Any problems will be actioned via the case review and root cause analysis action plans. The action plans are monitored by the governance midwife to ensure that improvements in care are made. The trends and any root cause analysis are discussed at the monthly governance meetings to ensure that appropriate action has been taken to maintain safety.

The guideline for the Management of caesarean birth will be audited in line with the annual audit programme, as agreed by the CBU. The audit action plan will be reviewed at the monthly risk management meetings on a quarterly basis and monitored by the governance midwife to ensure that improvements in care are made.

## **9.0 Equality and Diversity**

The Trust is committed to an environment that promotes equality and embraces diversity in its performance as an employer and service provider. It will adhere to legal and performance requirements and will mainstream equality, diversity and inclusion principles through its policies, procedures and processes. This guideline should be implemented with due regard to this commitment.

To ensure that the implementation of this guideline does not have an adverse impact in response to the requirements of the Equality Act 2010 this policy has been screened for relevance during the policy development process and a full equality impact assessment is conducted where necessary prior to consultation. The Trust will take remedial action when necessary to address any unexpected or unwarranted disparities and monitor practice to ensure that this policy is fairly implemented.

This guideline can be made available in alternative formats on request including large print, Braille, moon, audio, and different languages. To arrange this please refer to the Trust translation and interpretation policy in the first instance.

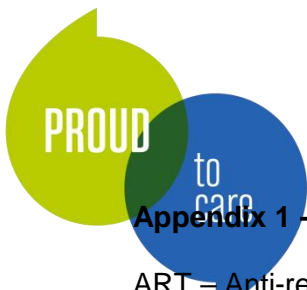
The Trust will endeavor to make reasonable adjustments to accommodate any employee/patient with particular equality, diversity and inclusion requirements in implementing this guideline. This may include accessibility of meeting/appointment venues, providing translation, arranging an interpreter to attend appointments/meetings, extending policy timeframes to enable translation to be undertaken, or assistance with formulating any written statements.

### **9.1 Recording and Monitoring of Equality & Diversity**



The Trust understands the business case for equality, diversity and inclusion and will make sure that this is translated into practice. Accordingly, all guidelines will be monitored to ensure their effectiveness.

Monitoring information will be collated, analysed and published on an annual basis as part of Equality Delivery System. The monitoring will cover the nine protected characteristics and will meet statutory employment duties under the Equality Act 2010. Where adverse impact is identified through the monitoring process the Trust will investigate and take corrective action to mitigate and prevent any negative impact.



**Appendix 1 - Glossary of terms**

- ART – Anti-retroviral therapy
- ECV – External cephalic version
- FBC – Full blood count
- HDU – High dependency care
- NICE – National institute for Health and Clinical Excellence
- NIPE – Newborn and infant physical examination
- RCOG – Royal College of Obstetricians and Gynaecologists

**Appendix 2 (NICE 2021)**

**Table 1 Outcomes for women that may be more likely with caesarean birth**

Outcomes	Estimated risk with vaginal birth	Calculated risk with caesarean birth	Risk difference	Category of evidence
Peripartum hysterectomy	About 80 women per 100,000 would be expected to have a peripartum hysterectomy (so 99,920 would not)	About 150 women per 100,000 would be expected to have a peripartum hysterectomy (so 99,850 would not)	About 70 more women per 100,000 who had a caesarean birth would be expected to have a peripartum hysterectomy; so for about 99,930 women per 100,000 the outcome was the same irrespective of the method of birth.	A - Planned mode of birth
Maternal death	About 4 women per 100,000 would be expected to die (so 99,996 would not)	About 24 women per 100,000 would be expected to die (so 99,976 would not)	About 20 more women per 100,000 who had a caesarean birth would be expected to die; so for about 99,980 women per 100,000 the outcome was the same irrespective of the method of birth.	A - Planned mode of birth
Length of hospital stay	About 2 and a half days on average	About 4 days on average	About 1 to 2 days longer on average with caesarean birth. <b>[2011]</b>	A - Planned mode of birth
Placenta accreta in future pregnancy	About 40 women per 100,000 would be expected to have a placenta accreta in a future pregnancy (so 99,960 would not)	About 100 women per 100,000 would be expected to have a placenta accrete in a future pregnancy (so 99,900 would not)	About 60 more women per 100,000 who had a caesarean birth would be expected to have a placenta accreta in a future pregnancy; so for about 99,940 women per 100,000 the outcome was the same irrespective of the method of birth.	C - Actual mode of birth (including planned and unplanned caesarean)
Uterine rupture in future pregnancy or birth	About 40 women per 100,000 would be expected to have a uterine rupture in a future pregnancy (so 99,960 would not)	About 1,020 women per 100,000 would be expected to have a uterine rupture in a future pregnancy (so 98,980 would not)	About 980 more women per 100,000 who had a caesarean birth would be expected to have a uterine rupture in a future pregnancy; so for about 99,020 women per 100,000 the outcome was the same irrespective of the method of birth.	C - Actual mode of birth (including planned and unplanned caesarean)

**Table 2 Outcomes for babies that may be more likely with caesarean birth**

Outcomes	Estimated risk with vaginal birth	Calculated risk with caesarean birth	Risk difference	Category of evidence
Neonatal mortality	About 30 babies per 100,000 would be expected to die (so 99,970 would not)	About 50 babies per 100,000 would be expected to die (so 99,950 would not)	About 20 more babies per 100,000 whose mothers had a caesarean birth would be expected to die; so for about 99,980 babies per 100,000 the outcome was the same irrespective of the method of birth.	A - Planned mode of birth
Asthma	About 1,500 per 100,000 children would be expected to have asthma (so 98,500 would not)	About 1,810 per 100,000 children would be expected to have asthma (so 98,190 would not)	About 310 more children per 100,000 whose mothers had a caesarean birth would be expected to have asthma; so for about 99,690 babies or children per 100,000 the outcome was the same irrespective of the method of birth.	B - Actual mode of birth (excluding unplanned caesarean)
Childhood obesity	About 4,050 per 100,000 children would be expected to be obese (so 95,950 would not)	About 4,560 per 100,000 children would be expected to be obese (so 95,440 would not)	About 510 more children per 100,000 whose mothers had a caesarean birth would be expected to be obese; so for about 99,490 children per 100,000 the outcome was the same irrespective of the method of birth.	B - Actual mode of birth (excluding unplanned caesarean)

## Appendix 4 (NICE 2021)

Table 3 Outcomes for women that may be less likely with caesarean birth

Outcomes	Estimated risk with vaginal birth	Calculated risk with caesarean birth	Risk difference	Category of evidence
Urinary incontinence occurring more than 1 year after birth	About 48,700 per 100,000 women would be expected to have urinary incontinence (so 51,300 would not)	About 27,520 per 100,000 women would be expected to have urinary incontinence (so 72,480 would not)	About 21,180 fewer women per 100,000 who had a caesarean birth would be expected to have urinary incontinence, so for about 78,820 women per 100,000 the outcome was the same irrespective of the method of birth.	B - Actual mode of birth (excluding unplanned caesarean)
Faecal incontinence occurring more than 1 year after birth; compared to assisted vaginal birth	About 15,100 per 100,000 women would be expected to have faecal incontinence after assisted vaginal birth	About 7,410 per 100,000 women would be expected to have faecal incontinence (so 92,590 would not)	About 7,690 fewer women per 100,000 who had a caesarean birth would be expected to have faecal incontinence; so for about 92,310 women per 100,000 the outcome was the same irrespective of the method of birth.	B - Actual mode of birth (excluding unplanned caesarean)
Vaginal tear: third- and fourth-degree tears	About 560 per 100,000 women would be expected to have a third- or fourth-degree vaginal tear (so 99,440 would not)	About 0 per 100,000 women would be expected to have a third- or fourth-degree vaginal tear (so 100,000 would not)	About 560 fewer women per 100,000 who had a caesarean birth would be expected to have third- or fourth-degree vaginal tear; so for about 99,440 women per 100,000 the outcome was the same irrespective of the method of birth. <b>[2011]</b>	A - Planned mode of birth
Perineal/abdominal pain during birth and 3 days after birth	Median pain scores of 7.3 (during birth) and 5.2 (3 days after birth) (1 is no pain, 10 is most severe pain)	Median pain scores of 1.0 (during birth) and 4.5 (3 days after birth)	Reduction in pain score with caesarean birth compared to vaginal birth of 6.3 (during birth) and 0.7 (3 days after birth) (1 is no pain, 10 is most severe pain) <b>[2011]</b>	A - Planned mode of birth





## USE OF ANTENATAL CORTICOSTEROIDS AT TERM, BEFORE PLANNED CAESAREAN BIRTH

Infographic supported by the Royal College of Obstetricians and Gynaecologists

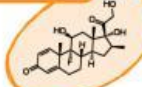
### WHO?

Steroids are sometimes offered to pregnant women due to have a **planned Caesarean birth** between **37 to 39 weeks'** pregnant.



### WHAT?

Steroids are naturally occurring **chemical messengers (hormones)** which are **essential for life**. We offer a man-made version of steroids to some pregnant women before birth to benefit the baby.



We know that steroids help premature babies (born before 37 weeks) with their breathing.

### WHEN?

Steroids are given within the **week leading up to the birth**.



### HOW?

Steroids pass into the **mother's blood**, then **cross the placenta**, to reach the baby.



### WHY?

Babies born by planned Caesarean are more likely to have **difficulties clearing the fluid** in their **lungs** at birth, and are more likely to need to be admitted to the Neonatal Unit. This is an area which specialises in the care of unwell or premature newborn babies.

These risks are higher for babies born before 39 weeks.

Steroids probably reduce the chance that a baby born by Caesarean will need admission to the **Neonatal Unit** for breathing problems.



### SIDE EFFECTS FOR MOTHER

- Nausea
- Pain at injection site
- Flushing
- Rise in blood sugar if diabetes

### UNCERTAINTIES

Steroids are thought to be **generally safe** and have been used in Maternity settings for over thirty years, especially before premature birth. There is good evidence to show that steroids have benefits for babies born before 35 weeks.

However, there is **less evidence** on the benefits of steroids for babies born by Caesarean section after 37 weeks.



For babies born near their due date, by Caesarean section, it is still not clear if steroids can help to reduce breathing problems, or if steroids reduce the overall possibility a baby is admitted to a Neonatal Unit.

There is also some evidence that steroids given later in pregnancy might cause **low blood sugars in baby after birth**.



There is **less information available on longer-term effects** of steroids in babies, particularly those born near their due date.

Steroids given later in pregnancy might also affect a baby's brain development, leading to delay in reaching milestones or affecting educational achievement, however, the evidence for this is **limited**.



For more information scan here



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**Appendix 6**

Maintain a record of the document history, reviews and key changes made (including versions and dates)

Version	Date	Comments	Author
1.03/08/2009	03/08/2009		
2.09/05/2011	09/05/2011		
3. 14/11/2014	14/11/2014		
4. 21/10/2015	21/10/2015		

**Review Process Prior to Ratification:**

Name of Group/Department/Committee	Date
Reviewed by Maternity Guideline Group	
Reviewed at Women's Business and Governance meeting	
Approved by CBU 3 Overarching Governance Meeting	
Approved at Trust Clinical Guidelines Group	
Approved at Medicines Management Committee (if document relates to medicines)	N/A



**Trust Approved Documents (policies, clinical guidelines and procedures)**

**Approval Form**

Please complete the following information and attach to your document when submitting a policy, clinical guideline or procedure for approval.

<b>Document type (policy, clinical guideline or procedure)</b>	Guideline
<b>Document title</b>	Management of Caesarean Section
<b>Document author</b> (Job title and team)	Governance Midwife
<b>New or reviewed document</b>	Reviewed
<b>List staff groups/departments consulted with during document development</b>	
<b>Approval recommended by (meeting and dates):</b>	<b>WB&amp;G 21/10/2022</b> <b>CBU3 B&amp;G 02/11/22</b>
<b>Date of next review (maximum 3 years)</b>	02/11/2025
<b>Key words for search criteria on intranet (max 10 words)</b>	LSCS
<b>Key messages for staff (consider changes from previous versions and any impact on patient safety)</b>	
<b>I confirm that this is the <u>FINAL</u> version of this document</b>	<b>Name: Molly Claydon</b> <b>Designation: Governance Support Co-ordinator</b>

**FOR COMPLETION BY THE CLINICAL GOVERNANCE TEAM**

<b>Approved by (group/committee): CBU3 Business and Governance</b>  <b>Date approved: 02/11/2022</b>  <b>Date Clinical Governance Administrator informed of approval: 14/11/2022</b>  <b>Date uploaded to Trust Approved Documents page: 17/11/2022</b>
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