Enhanced Recovery after Caesarean Delivery

Classification:	Guideline
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Departments/Group this Document applies to:	Women and Children, Surgery

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Guideline to be followed by (target staff): This guideline applies to all women who have had a caesarean section

To be read in conjunction with the following documents:
Milton Keynes University Hospital NHS Foundation Trust. Bladder Care Guideline. MIDW/GL/127. Version 4, 2018.
Milton Keynes University Hospital NHS Foundation Trust. Theatres Operational Policy: Appendix 8: Post anaesthetic recovery care of adult's SOP. OPS/GL/4. Version 7.2, 2017.

CQC Fundamental standards:
Regulation 9 – person centred care
Regulation 10 – dignity and respect
Regulation 11 – Need for consent
Regulation 12 – Safe care and treatment
Regulation 13 – Safeguarding service users from abuse and improper treatment
Regulation 15 – Premises and equipment
Regulation 16 – Receiving and acting on complaints
Regulation 17 – Good governance
Regulation 18 – Staffing
Regulation 19 – Fit and proper

Disclaimer Since every patient's history is different, and even the most exhaustive sources of information cannot cover every possible eventuality, you should be aware that all information is

provided in this document on the basis that the healthcare professionals responsible for patient care will retain full and sole responsibility for decisions relating to patient care; the document is intended to supplement, not substitute for, the expertise and judgment of physicians, pharmacists or other healthcare professionals and should not be taken as an indication of suitability of a particular treatment for a particular individual.

The ultimate responsibility for the use of the guideline, dosage of drugs and correct following of instructions as well as the interpretation of the published material **lies solely with you** as the medical practitioner.

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Executive Summary

Enhanced recovery is a recognised pathway for effective management of both surgical and medical pathways. Caesarean section (CS) is a proposed operation included in Fulfilling the potential: a better journey for patients and a better deal for the NHS (Enhanced Recovery Partnership, [2012]).

The 'Enhanced Recovery after Caesarean Delivery' guideline is introducing a modern, evidence-based surgery pathway for women undergoing CS designed to:

- Provide effective, timely post-operative pain relief
- Provide excellent perioperative nutrition
- Encourage rapid post-operative mobilisation
- Offer a structured approach to postoperative and perioperative management, including pain relief by a multidisciplinary team
- Improve patient experience

This guideline covers:

☐Planning for enhanced recovery programme (ERP) for elective caesarean section
☐Pre-operative assessment
☐On day of surgery and intra-operative management
☐Postoperative management
☐Community care
☐Risk management

1.0 Implementation and dissemination of document

Staff can access the policy via the Hospital intranet in the Anaesthetic or Maternity section of the clinical guidelines

2.0 Processes and procedures

2.1 Planning for enhanced recovery program elective caesarean section

In antenatal clinic at 34-36 weeks: Enhanced Recovery should be offered to all women planning an elective CS unless otherwise medically specified.

The date for CS should be agreed in the antenatal clinic with the indication for caesarean section clearly documented in eCare. The woman should be made aware of enhanced recovery. The ERP patient information leaflet should be given to the woman during the consultation. The predicted date of discharge should also be given at this time, so that the woman is able to arrange support at home before she comes into hospital. These dates must be documented on the cover of the patient information leaflet. Consent for the procedure and a MRSA swab should be taken at this stage.

Ensure that Hb has been optimised, if Hb<100 consider IV iron if not responding to oral iron supplements.

2.2 Pre- Operative Assessment

Women should be advised to purchase Paracetamol and Ibuprofen, ready to be used post-operatively at home.

Fasting is also explained. The woman is encouraged to eat normally until 3am on the day of the operation. She is also advised to drink water, black tea or coffee, or non-fizzy iso-osmolar energy drinks, such as Ribena or non-fizzy isotonic sports drinks up until 7am on the day of the operation.
Pre-medication should be supplied:

Night before CS	Ranitidine 150mg
Morning of the CS	Ranitidine 150mg

Two eligible samples of blood grouping and serum save, and full blood counts are taken during this session. A MRSA swab should be taken at this stage if not done in clinic. The results of the MRSA swab should be checked and documented in eCare.

The woman should be advised that although she is on an elective list, sometimes this needs to be interrupted due to emergencies and so there might be a delay on the day of surgery, or in extreme cases cancelled on the day due to emergencies or other safety situations.

2.3 On the day of surgery

If surgery is going to be significantly delayed, consider giving a clear non-fizzy drink or start an IV infusion of fluids after an anaesthetic review.

The midwife should check that the woman has her own supply of Paracetamol and Ibuprofen at home. If the woman does not have the drugs, then a TTO pack of Paracetamol and Ibuprofen may be given.

Consider changing the order of the list if one of the women is not suitable for ER.

2.3.1 Procedure

Neuraxial block with Diamorphine will be used unless contraindicated or declined. The anaesthetist will decide this following an overall assessment and an informed discussion with the woman. If general anaesthetic is required, elements of the enhanced recovery pathway can still be followed.

The grade of operator must be suitable for the complexity of the case. Avoid drains, if possible. Use operative techniques to minimise pain such as avoiding dissecting the sheath posteriorly and use the Cohen's entry is advised in the Enhanced Recovery Partnership Report 2012.

Use local anaesthesia (Bupivacaine) to supplement post-operative analgesia, either as local infiltration by the surgeon or TAP blocks by the anaesthetist. For women who have had at least two previous caesareans, insert a wound infiltration catheter ("pain buster").

2.4 Duties of the team

2.4.1 Anaesthetist

- To carry out the usual pre-operative assessment on the day of surgery
- Normal anaesthetic management in theatre, plus addition of 4mg IV Ondansetron during the procedure if available.
- Appropriate fluid management in theatre. Disconnect the IV fluids at the end of surgery, either in theatre or make plans for disconnection in recovery. (continue Syntocinon infusion if it is required.)
- Ensure post-operative analgesia is prescribed on eCare
- During the initial phase of introducing Enhanced Recovery, the anaesthetist covering emergency obstetrics should follow up with the woman in the afternoon, approximately six hours after the spinal.

They should assess the woman for mobilization. Enhanced Recovery patients should be highlighted in the anaesthetic follow-up book.
- Once Enhanced Recovery is established and midwives are assessing for mobilisation, the emergency obstetric anaesthetist should ensure that anaesthetic follow-up prior to discharge has occurred (ideally on the day of surgery or before 12pm the next day).

2.4.2 Obstetrician

- Carry out required actions in section 2.1
- Document that the urinary catheter should be removed at 6 hours postoperatively unless there are surgical reasons to keep it in e.g. bladder injury.
- Review the woman prior to discharge, assess pain and analgesia requirements. See section 2.6

2.4.3 Midwife

Pre-theatre

- Ensure the woman is fully prepared for theatre prior to transfer to theatre.

In theatre and recovery

- The woman must remain in recovery for a minimum of 30 minutes with continuous clinical observation. (This applies to all women irrespective of the type of anaesthetic).
- It is the responsibility of the named midwife to undertake midwifery observations and escalate any concerns
- Liaise with the recovery nurse to ensure all observations are within normal range following a maternity operative procedure
- Initiate skin-to-skin care between mother and baby
- Initiate breastfeeding if this is the woman's choice
- Complete appropriate documentation in recovery prior to transfer to Ward 9

On Ward 9

- Ensure handover of care from recovery to Ward 9 is face-to-face using SBAR
- Midwife to follow enhanced recovery guideline
- Support mothers to establish effective feeding and close and loving relationships
- Ensure women's/families emotional needs are met
- Ensure women have appropriate pain management
- Complete appropriate documentation prior to transfer to the community setting

2.4.4 Recovery nurse

- To disconnect the IV fluids unless otherwise specified, if the woman is not feeling sick and observations are stable.
- To carry out the usual recovery monitoring for a minimum of 30 minutes
- To discharge them from recovery once they meet discharge criteria
- To allow the woman to drink water whilst in recovery

2.5 Analgesia and supportive medication

The anaesthetist must prescribe analgesia on eCare as an inpatient:

- Paracetamol 1gm orally 6 hourly
- Ibuprofen 400mg orally 8 hourly (unless contraindicated)
- Dihydrocodeine 30mg 4-6 hourly PRN, max dose in 24 hours 120mg. (first line for breakthrough pain). Advise the patient to use the minimum effective dose for the shortest period of time.
- Oramorph 10-20mg 2hrly PRN (second line for break through pain)
- Ondansetron 4mg IV TDS PRN (this is also effective against pruritus)

Medication to be prescribed on discharge

- Dihydrocodeine TTO 30mg 4-6 hourly PRN, max dose in 24 hours 120mg (28 tablets supply) Advise the patient to use the minimum effective dose for the shortest period of time
- Lactulose 10ml BD regularly
- Nausea should be also treated appropriately and quickly:

2.6 Care during 24 hours following discharge from recovery

Observations of respiratory rate, heart rate, blood pressure and pain scores will continue on the postnatal ward as per the Recovery guideline.

Once the woman is on the ward, she should be encouraged to eat and drink when she feels ready. This may require food and drink to be brought to the bedside initially.
The spinal anaesthetic usually wears off after 6 hours. After this time, if the woman can move her lower limbs without weakness, the urinary catheter should be removed unless alternative instructions from the surgeon. The woman should pass at least 200ml of urine in a single void within 6 hours of having the catheter removed. Continue bladder care as per the Bladder Care guideline.
Women should be encouraged to mobilise as soon as possible. A member of staff should accompany the women on initial mobilisation.
Once the observations are stable and the woman is mobilising the intravenous cannula can be removed. If the cannula cannot be removed please ensure it is flushed regularly.
If the woman is breastfeeding, ensure she is breastfeeding effectively prior to discharge to prevent delayed lactogenesis. A breastfeeding assessment must be completed by the midwife prior to discharge home.

The babies of enhanced recovery mothers should be prioritised for baby checks and hearing tests to prevent any delays in discharge.

If a post-operative full blood count (FBC) is required, this should be collected at 6am on day 1 so that the result is available for discharge planning and if required TTO for Ferrous Sulphate should be prescribed on eCare

An obstetrician will review the woman on day 1, prior to discharge. Pain should be assessed and moderate or severe pain should be acted upon. Discharge should be delayed until 4 hours after the last Oramorph dose, to ensure further Oramorph is not required. The woman should be discharged with Dihydrocodeine as a TTO, which should have been prescribed on eCare at the time of surgery and will be available as a stock TTO.

All breastfed infants should be monitored for opioid adverse effects (drowsiness, poor feeding and breathing problems) regardless of the maternal dose.
If significant opioid adverse effects develop in the mother, there is the possibility she is an ultra-rapid metaboliser and that the risk of adverse effects in the infant may be increased.

The time of discharge is aimed at midday on the day after the operation. The woman needs to have an appropriate adult available to escort them home and stay with them for at least 24 hours. The woman should still be happy for discharge that day and feel confident in managing her own post-natal wellbeing. It is key that she is feeding her baby well and is aware of the signs of effective feeding.

2.7 Community care

Women participating in the ERP will follow routine community postnatal visits. Prolene sutures should be removed on day 5 by the community midwife (CMW). If there are post-operative concerns that need to be seen by a hospital doctor, it should be discussed with the on call registrar and the woman asked to attend maternity triage if necessary.

2.8 Risk Management

In relation to this guideline, a Datix form must be completed in the following cases
□ Anaesthetic complications
□ Hysterectomy / laparotomy
□ Delayed elective CS
□ Retained swab or instrument

2.9 How this Guideline will be implemented

All Guidelines are available on the intranet. All staff has a responsibility to check the Trust's intranet and ensure that they are referring to the most recent issue of the document.
New and updated versions of the guideline are implemented as follows:
□ Update at service specific and ward meetings when changes have been made to the guideline
□ At doctors' induction to the unit

2.10 How necessary training will be provided

Obstetric Specialty doctors are trained and have regular assessments of competencies for the safe and appropriate use of Caesarean Section. This competency based training is in line with the curriculum set by the Royal College of Obstetricians, approved by the General Medical Council (GMC).

Staff will be made aware of guidelines during the induction process by their clinical line manager. All staff will have a responsibility to check the intranet for the latest version of guidelines when and as required by clinical practice. Updates to guidelines are notified according to the process described in section 4.

3.0 Statement of evidence/references

The Breastfeeding Network (2017) *Analgesics (pain killers) and breastfeeding.* / Wendy Jones and the Breastfeeding Network. [Drugs factsheet]. [Online]. Available from: https://breastfeedingnetwork.org.uk/wp-content/dibm/analgesics%20and%20breastfeeding.pdf [Accessed 14 June 2019]

Brigham and Women's Hospital (2011) *Standard of care: bariatric: physical therapy management of the bariatric patient.* [Online]. Available from: https://www.brighamandwomens.org/assets/BWH/patients-and-families/rehabilitation-services/pdfs/inpt-bariatic.pdf [Accessed 14 June 2019]

Checketts, M.R, Alladi, R., Ferguson, K. et al.; AAGBI Working Party (2015) Recommendations for standards of monitoring during anaesthesia and recovery 2015 : Association of Anaesthetists of Great Britain and Ireland. [Online]. *Anaesthesia,* first published 19 November 2015; issue online 10 December 2015, 2016;71(1): 85-93. https://doi.org/10.1111/anae.13316; AAGBI badged PDF available from: https://anaesthetists.org/Home/Resources-publications/Guidelines/Standards-of-monitoring-during-anaesthesia-and-recovery

Department of Health (2004) *Maternity standard, National Service Framework for Children, Young People and Maternity Services.* [Online]. Available from: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/199957/National_Service_Framework_for_Children_Young_People_and_Maternity_Services_-_Maternity_Services.pdf [Accessed 13 June 2019]

Enhanced Recovery Partnership [2012] *Fulfilling the potential: a better journey for patients and a better deal for the NHS.* [Online]. Leicester: NHS improvement. Available from: https://webarchive.nationalarchives.gov.uk/20130123170840/http://www.improvement.nhs.uk/documents/er_better_journey.pdf [Accessed 24 June 2019]

National Institute for Health and Care Excellence (2011; last updated April 2019) *Caesarean section.* [Clinical guideline CG132]. [Online]. Available from: https://www.nice.org.uk/guidance/cg132 [Accessed 24 June 2019]

National Institute for Health and Care Excellence (2013) *Caesarean section.* [Quality standard QS32]. [Online]. Available from: https://www.nice.org.uk/guidance/qs32 [Accessed 25 June 2019]

National Institute for Health and Care Excellence (2019) *Intrapartum care for women with existing medical conditions or obstetric complications and their babies.* [NICE guideline NG121]. [Online]. Available from: https://www.nice.org.uk/guidance/ng121 [Accessed 25 June 2019]

NHS Institute for Innovation and Improvement (2006) *Focus on normal birth and reducing Caesarean section rates : pathways to success a self-improvement toolkit.* Coventry : NHS Institute for Innovation and Improvement.

Plaat, F., Bogod, D., Bythell, V. et al.; AAGBI Working Party (2013) *OAA / AAGBI guidelines for obstetric anaesthetic services 2013.* [Online]. London: Association of Anaesthetists of Great Britain & Ireland and the Obstetric Anaesthetists' Association. Available from: https://anaesthetists.org/Portals/0/PDFs/Guidelines%20PDFs/Guideline_obstetric_anaesthetic_services_2013_final.pdf?ver=2018-07-11-163755-693&ver=2018-07-11-163755-693 [Accessed 13 June 2019]

Royal College of Anaesthetists (2019) *Guidelines for the Provision of Anaesthesia Services (GPAS) Chapter 9: Guidelines for the provision of anaesthesia services for an obstetric population 2019.* [Online]. Available from: https://www.rcoa.ac.uk/system/files/GPAS-2019-09-OBSTETRICS.pdf [Accessed 25 June 2019]

World Health Organization (2009) *Surgical safety checklist.* [Online]. Revised 1 / 2009. Available from: https://www.who.int/patientsafety/safesurgery/checklist/en/ [Accessed 14 June 2019]

4.0 Governance

4.1 Record of changes to document

Version number: 2		**Date:** May 2019		
Section Number	**Amendment**	**Deletion**	**Addition**	**Reason**
2.0	Change in practice	Self-medication deleted		Self-medication is not beneficial for maternity due to the short stay
2.4	Medication change	Post-operative medication	Alternative post-operative medication	Improve pain relief for women post surgery
2.1 and 2.2	Hand held records	Removed and eCare added in		Change to electronic patient records
2.6	Removal of cannula		Changed to remove when observations are stable	
Appendix 1	Mobilisation	Remove flow chart on mobilisation		Not required
2.5	Dihydrocodeine 30mg		Dihydrocodeine 30-60mg. Dihydrocodeine TTO 30mg 4-6 hourly PRN, max dose in 24 hours 180mg (28 tablets supply)	Feedback from pharmacy

4.2 Consultation History

Stakeholders Name/Board	Area of Expertise	Date Sent	Date Received	Comments	Endorsed Yes/No
Anaesthetists	Anaesthetics	24/04/2019	10/05/2019	Change of medication	Yes
Julie Cooper	Head of Midwifery	24/04/2019	08/05/2019	Change hand held records to eCare; typos; routine postnatal care	Yes
Obstetricians and midwives		24/04/2019			
Jan Playel	Matron, Surgery	24/04/2019			
Kevin Keogh	Theatres	24/04/2019			
Francisca Mngola	Pharmacist	24/04/2019	13/05/2019	Typo's and information on TTO's	Yes
Cath Hudson	Risk Midwife	24/04/2019	24/04/2019	Typo's	Yes
Jessica Matson	Midwife	24/04/2019	30/04/2019	Question about ward stock of dihydrocodeine	Yes
Jacqueline McAinsh	Midwife	24/04/2019	25/04/2019	Question about suitability of dihydrocoedine and breastfeeding	Yes
Michelle Hancock	Infant Feeding Lead Midwife	24/04/2019	16/05/2019	Breastfeeding assessment to be completed prior to discharge	Yes
Richard Stewart	Anaesthetist	June 2019	22/07/2019	Feedback from the theatre CIG	Yes
Zainab Alani	Pharmacist Manager-Medicines Safety and Governance	10/2019	4/10/2019	Comments received	Yes
Alan Dutta Plummer	Pharmacy Business Manager	10/2019	4/10/2019		
Jill McDonald	Deputy Chief Pharmacist	10/2019	8/10/2019		
Manish Nathwani	Pharmacist Manager	10/2019	11/10/2019		
Helen Chadwick	Chief Pharmacist	10/2019	10/10/2019		
Francisca Mngola	Pharmacist	4/7/2019	13/10/2019	Comments received	Yes

4.3 Audit and monitoring

This Guideline outlines the process for document development will be monitored on an ongoing basis. The centralisation of the process for development of documents will enable the Trust to audit more effectively. The centralisation in recording documents onto a Quality Management database will ensure the process is robust.

Audit/Monitoring Criteria	Tool	Audit Lead	Frequency of Audit	Responsible Committee/Board
Post-operative pain management, including compliance with this guideline	Audit	Consultant anaesthetists (Dr Hariharan for the next audit)	Every two years	Consultant anaesthetists

Auditable Standards

□ Patient Satisfaction Survey
□ Length of stay
□ Post-operative pain management
□ The effect of ERP on community care
□ Re-admissions

4.4 Equality Impact Assessment

As part of its development, this Guideline and its impact on equality has been reviewed. The purpose of the assessment is to minimise and if possible remove any disproportionate impact on the grounds of race, gender, disability, age, sexual orientation, religion or belief, pregnancy and maternity, gender reassignment or marriage and civil partnership. No detriment was identified. Equality Impact assessments will show any future actions required to overcome any identified barriers or discriminatory practice.

Equality Impact Assessment			
Division	Women and Children	Department	Maternity
Person completing the EqIA	Eleanor Tyagi	Contact No.	Bleep 1285
Others involved:	Anaesthetists, theatres	Date of assessment:	10/05/2019
Existing policy/service	Yes	New policy/service	N/A

Will patients, carers, the public or staff be affected by the policy/service?	Yes
If staff, how many/which groups will be affected?	*Midwives, nurses, medical staff ad theatre staff*

Protected characteristic	Any impact?	Comments
Age	NO	Positive impact as the policy aims to recognise diversity, promote inclusion and fair treatment for patients and staff
Disability	NO	
Gender reassignment	NO	
Marriage and civil partnership	NO	
Pregnancy and maternity	YES	
Race	NO	
Religion or belief	NO	
Sex	NO	
Sexual orientation	NO	

What consultation method(s) have you carried out?
Meetings, community involvement via Maternity MK
How are the changes/amendments to the policies/services communicated?
Email, teaching sessions, Newsletters
What future actions need to be taken to overcome any barriers or discrimination?

What?	Who will lead this?	Date of completion	Resources needed
Review date of EqIA			

Appendix 1 Enhanced Recovery Flow Chart

Pre-operative Assessment

- Advise purchase of Paracetamol and Ibuprofen for home use following CS
- Explain fasting requirements
- Supply Ranitidine pre-medication
- FBC x 2
- MRSA swab

Day of operation

- Admission at 07:15hrs
- Midwife to ask woman is Paracetamol and Ibuprofen ready at home
- Prepare for and transfer to theatre

In theatre and recovery

- IV Ondansetron 4mg IV during procedure
- Disconnect fluids at end of surgery in theatre or recovery (continue Syntocinon if required)
- Anaesthetist prescribe postoperative medication
  - Paracetamol 1gm PO 4hrly
  - Ibuprofen 400mg PO 8hrly (unless contraindicated)
  - Oramorph 10-20mg 2hrly PRN
  - Lactulose 10ml BD
  - Dihydrocodeine TTO 30mg 4-6 hourly PRN, max dose in 24 hours 180mg (28 tablets supply)
  - Ondansetron 4mg IV TDS PRN
  - Usual recovery monitoring for a minimum of 30 minutes
  - Allow woman to drink water in recovery

Postnatal Ward Day 0

- Usual post CS monitoring (including resp. rate, heart rate, BP and pain scores)
- Encourage to eat and drink when ready
- At 6hrs check woman can move lower limbs without weakness
- Remove indwelling catheter at 6 hours unless otherwise specified by surgeon
- Review of personal hygiene 4-6hours following surgery
- Remove cannula when able to mobilise
- Possible review by anaesthetist in afternoon

Postnatal Ward Day 1

- FBC at 6am
- Review by obstetrician prior to discharge, assess pain and analgesia requirements and Hb for Ferrous Sulphate if required. If required prescribe Dalteparin TTO's
- Review by anaesthetist before midday if not seen on Day 0
- Midwife to confirm with woman that she has an appropriate adult available to take them home and remain with them for at least 24 hours
- Midwife to confirm that they have analgesia ready at home and dispense any additional TTO's required
- Midwife has completed a breast feeding assessment and happy with baby feeding discharge to care of community midwife

Community Care

- Community midwife visit on Day 2 (or 1st day post discharge)
- Remove Prolene sutures Day 5