University Hospitals Sussex
NHS Foundation Trust

Recovery Care

Maternity Protocol: MP051

Date agreed September 2018

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Version:	4.1
Approval Committee:	Women's Safety and Quality Committee
Date agreed:	January 2022
Review date:	December 2023
Cross reference:	**MP012** Venous thrombosis (VTE) **MP050** Caesarean section (LSCS) **MP056** High Dependency Care **MP040** Bladder care

Contents

Key Principles

A protocol is a set of measurable, objective standards to determine a course of action. Professional judgement may be used in the application of a protocol.

Scope

This protocol applies to:

- Any woman following regional block/general anaesthetic for caesarean section or any other operative obstetric procedure.

Responsibilities

Recovery Practitioners, Midwives & Obstetricians:

- To access, read, understand and follow this guidance
- To use their professional judgement in application of this protocol

Management:

- To ensure the protocol is reviewed as required in line with Trust and National recommendations
- To ensure the protocol is accessible to all relevant staff
- To ensure the protocol is available to service users on request

1 Objective Standards Recovery

1.1 Post anaesthetic recovery involves the short term critical care required by patients during their immediate postoperative period until they are stable, conscious and orientated, and the recovery nurse deems that discharge criteria have been met.

1.2 All women require the same high standard of anaesthetic care in recovery. The principles of recovering any woman undergoing regional anaesthesia are the same as women having general anaesthesia; postoperative complications can still occur.

2 Resources

2.1 All patients should be recovered in a designated recovery area

2.2 All patients should be recovered by recovery-trained staff[1]

2.3 Continuous one-to-one care (where the patient is continually monitored with staff member present) should be available immediately following GA or regional anaesthesia until the patient has regained airway control and cardiovascular stability and is able to communicate[1].

2.4 Some patients require longer continuous care, for example those requiring on-going blood/blood product transfusion after major post-partum haemorrhage.

2.5 Staff should be trained in recovery skills[1]

2.6 Anaesthetic and obstetric on call rotas should be readily available

3 Roles and responsibilities for staff in obstetric recovery:

	Communicates / Liaises with	Responsible for
Scrub nurse	Obstetrician (surgeon) Recovery nurse	Handover details of surgery, estimated blood loss, type and location of drains and other devices, vaginal pack and any other important information to recovery staff
Recovery nurse	Mother (patient) Midwife allocated to recovery Anaesthetist from surgery Obstetrician (surgeon) LW co-ordinator	Providing recovery care to patient whilst on LW: Observations Analgesia Hygiene needs Communication and handover of care to maternity team

		Documentation in theatre pathway and maternal notes
Midwife providing care	Mother (patient) Recovery nurse Anaesthetist from surgery Obstetrician (surgeon) LW co-ordinator	Providing care for the newborn and support for infant feeding. Working with the recovery nurse to provide midwifery care for the mother and support to the recovery nurse if the mother's or birth person's condition is unstable, requiring more intensive input/observation
LW co-ordinator	Mother (patient) Birth Person Anaesthetist from surgery Obstetrician (surgeon) Midwifery Matron	Co-ordinating labour ward to ensure staff and women are safe and care is provided appropriately. Providing support for staff and being a point of reference as and when required. To be aware of any woman giving cause for concern and facilitate extra support or anaesthetic/obstetric review

Anaesthetist from surgery	Mother (patient) Obstetrician (surgeon) Recovery nurse Midwife allocated to recovery LW co-ordinator HDU/ITU team if care on either unit is required	Handover to the recovery nurse. Provide advice and support to the recovery nurse. Liaise with the LW co-ordinator if there are any issues or concerns about a patient. Arrange care for the patient on the HDU or ITU if required. Facilitate safe transfer of the patient to the HDU or ITU.
Obstetrician from surgery	Mother (patient) Recovery nurse Midwife allocated to recovery Anaesthetist from surgery LW co-ordinator	Handover any surgical instructions to the recovery nurse. Provide advice and support to the recovery nurse about any obstetric/surgical issues. Liaise with the LW co-ordinator if there are any issues or concerns about a patient. Complete a post-operative VTE assessment and prescribe the necessary thromboprophylaxis.

4 Equipment that should be available:

For each bed area	• Oxygen outlet and breathing system for 100% oxygen • Electrical sockets • Pulse oximetry • Suction unit (checked daily to ensure working) • Non-invasive Blood pressure measurement
In close proximity to recovery area	• IV cannula (+dressing, alcohol wipes and local anaesthetic) • IV fluids • ECG • Nerve stimulator (available in obstetric theatre) • Thermometer - tempo-dots (LW) or thermometers available in obstetric theatre) • Capnography (to measure end-tidal carbon dioxide concentration). –available on monitors in theatre, recovery and as a device in the resuscitation trolley. • Blood bottles/syringes/needles/sharps bin • Defibrillator • Resuscitation equipment and emergency drug box • Emergency bell (to summon immediate help) • Telephone • Haemocue (Main theatres)/ Blood gas machine (theatres/ITU/NNU) • Storage areas for equipment

AAGBI Guideline: Immediate post-anaesthesia recovery March 2013[8]

5 Criteria for transfer to the Recovery Area:

5.1 Women must be:

5.1.1 Extubated

5.1.2 Self-ventilating with an adequate respiratory effort and a respiratory rate >8 per minute

5.1.3 Oxygenated with oxygen sats >94%

5.1.4 Demonstrating a cough/gag reflex

5.1.5 Cardiovascularly stable

5.1.6 Fully reversed with respect to neuromuscular blockade (i.e. drugs which cause paralysis should have been reversed)

5.2 If the patient's general condition is poor or the patient is returning to labour ward recovery from main theatres/Level 5 recovery, adequate mobile monitoring will be needed during transfer. The anaesthetist is responsible for ensuring that this transfer is accomplished safely.

6 Hand-Over to the Recovery Area

6.1 Procedure performed and why (e.g. reason for caesarean section), any complications during surgery

6.2 Type of anaesthesia used

6.3 Any pre-existing medical disorders or allergies

6.4 Perioperative blood loss and any important intra-operative events / abnormalities

6.5 The present cardio-vascular state

6.6 Position and nature of drains, infusions, cannula or arterial devices & vaginal pack

6.7 Intraoperative analgesia and analgesics for post-operative period. If NSAIDS or Paracetamol have been given intra-operatively, inappropriate duplicate doses of similar prescriptions should be avoided by documenting on the drug chart.

6.8 Instructions for intravenous infusions including oxytocin & Magnesium (such infusions are the responsibility of the obstetric & midwifery staff)

6.9 Thromboprophylaxis

6.9.1 The VTE assessment algorithm on the drug chart should be completed

6.9.2 If LMWH is indicated, Enoxaparin should be prescribed on the drug chart according to the dosing algorithm

6.9.3 The first dose of enoxaparin should be prescribed on the 'ONCE ONLY' part of the drug chart at a time no sooner than four hours AFTER insertion of spinal anaesthetic, epidural catheter OR removal of said catheter

6.9.4 Subsequent doses should be prescribed at 1800hours in the regular part of the drug chart.

6.9.4.1 If the 1st dose has been given 12 or more hours (ie. Up to 06.00) before the 18:00 dose is due, then give the regular dose as prescribed

6.9.4.2 If the 1st dose has been given within 12 hours of 18:00, omit that dose until the next day

6.9.5 If there are any doubts regarding timings the anaesthetist should be consulted.

6.9.6 Any deviation from the algorithm needs to be fully documented in the maternal notes, together with the reasons. *(see MP012 Venous Thrombosis protocol)*

6.10 Any special instructions and analgesia for post-operative period prescribed

6.11 Provided that there is no expectation/possibility of further surgery all women should be allowed to eat and drink following LSCS or instrumental delivery. There is no need to delay oral intake for any specified time period, or until bowel sounds are heard. This is unnecessary and may delay recovery.

7 Care in Recovery (following any procedures including LSCS)

7.1 Following an operative procedure in obstetric theatre, the patient will be transferred to the designated recovery area when stable to do so.

7.2 7.2 One-to-one care will be provided on labour ward by an appropriately trained practitioner for the following minimum duration of time according to the procedure and risk category of the patient:

Procedure	Low Risk*	High Risk*
Cervical suture (insertion/removal)	Min. 30 mins	Min. 30 mins
Manual removal of placenta	Min 30 mins	Min. 1 hr
Perineal repair (tear)	Min. 30 mins	Min. 1hr
EUA for haemorrhage	Min. 1 hr	Min. 2 hrs
Instrumental delivery (spinal)	Min. 1 hr	2 hrs minimum
Instrumental (epidural top up)	Min. 30 mins	2hrs minimum
Caesarean	1 hour minimum	2 hours minimum

*See table below for low and high risk categories.

7.3 Initial observations and care will be provided by a trained recovery nurse, when the patient is stable and relevant criteria are met (2.3, 2.4) the recovery nurse may hand over to trained maternity staff for the remainder of one-to-one care duration, in agreement with LW co-ordinator.

7.4 Any staff providing caring for post-operative patients immediately after surgery on labour ward should have no other patient responsibility at the same time and have received training in post-operative monitoring.

Low Risk	High Risk
ASA 1-2	ASA 3+
Cardiovascular & respiratory systems entirely stable	significant co-morbidity eg. morbid obesity, poorly controlled DM, OSA, severe PET (not an exhaustive list)
uncomplicated procedure	total EBL ≥ 1000mls (PPH)
	GA case/ other anaesthetic reason (explain to staff)
	Cardiovascular / respiratory instability or potential for
	Ongoing pain / post-op nausea & vomiting
	Any patient receiving intrathecal morphine

Observations:

7.5 Frequency in the immediate post-operative period:

Frequency	Number of readings	Comment
Every 10 minutes	7 (up to 60 minutes)	Once discharge criteria met, & following minimum 1:1 care timeline, progress on to postnatal monitoring template.
Every 15 minutes	2 (up to 90 minutes)	
Every 30 minutes	Until discharge to postnatal	

7.6 The following observations will be recorded in the relevant format (MEOWS chart/ e-obs) at the intervals indicated above:

i) Blood pressure
ii) Heart rate
iii) Oxygen saturations and, if O_2 being given, the relevant flow-rate
iv) Respiratory rate

7.7 Temperature should be recorded with the 1st set of recovery observations and every 4 hours thereafter; if abnormal (<36°C or > 37.5°C) then a plan should be made with the anaesthetist &/or obstetrician to follow this up.

7.8 Urine output (hourly urometer only needed if high risk and requested by obstetrician / anaesthetist) should be documented on a fluid balance chart.

7.9 Level of consciousness (neuro response) – using the AVPU scale (Alert/responsive to Voice/responsive to Pain/Unresponsive)

7.10 Pain score – using the numeric rating scale (NRS) – rating pain between 0 (no pain at all) and 10 (the worst pain imaginable).

7.11 Blood loss from vagina, wound or drain

7.12 IV running correctly, if applicable (ie. fluids are connected)

7.13 All observations should be documented by the person undertaking them in the relevant documentary format (theatre pathway MEOWS chart / Patienttrack e-obs). The time of observations should be documented.

7.14 If the patient's condition is unstable or deteriorates, these observations may need to be taken more frequently and/or for a longer period of time than indicated.

7.15 For all CS patients and those receiving epidural/spinal morphine or diamorphine for any other procedure follow 'POM POM' when ready for discharge to postnatal care:

Post Operative Monitoring Protocol fOr Maternity (POM POM) protocol

8 Referrals

The recovery staff are experienced within their scope of practice and perform post anaesthesia care across a range of surgical specialties, but to be specific to maternity:

8.1 **Moderate PV bleeding**: If recovery nurses have concerns about maternal blood loss during the recovery period they should ask the midwife assigned to recovery area to check the PV blood loss and uterine tone or refer directly to the obstetrician.

8.2 **Heavy PV bleeding**: If the woman is bleeding heavily and/or showing signs of hypovolaemic shock the recovery nurse/midwife should pull the emergency bell and trigger the Obstetric Haemorrhage emergency pathway

8.3 If MEOWS chart triggers a review then an Obstetric and Anaesthetic review is required

8.4 If a woman's pain is not managed with the drugs prescribed the anaesthetist should be asked to review

8.5 If recovery nurses/midwives have any concerns about the woman's condition they should immediately ask for an Obstetric and Anaesthetic review

8.6 An anesthetist, preferably the one who performed the anaesthesia, should be informed if the patient does not meet the discharge criteria.

9 Discharge and Transfer Criteria from Recovery

The following criteria should be met before women are discharged and transferred from the recovery area:

9.1 The patient should be fully conscious with the presence of protective airway reflexes

9.2 Patients should be self-ventilating and oxygen saturation ≥95% in room air

9.3 Cardiovascular system should be stable with no unexplained cardiac irregularity.

9.4 Vital signs should reflect preoperative norms, allowing for deviations of ±20%

9.5 Pain, nausea and vomiting should be controlled and suitable analgesia and anti-emetic prescribed

9.6 Temperature should be within normal range (36.5 – 37.5 degrees)

9.7 Oxygen and IV therapy should be prescribed if required

9.8 All dressings should be dry and intact. If used, drains should be secure and patent. Pressure dressings should not be removed as their purpose is to improve or maintain haemostasis.

9.9 Uterus should be well contracted and lochia documented by midwife

9.10 Women on oxytocin infusions should be reviewed by obstetricians after two hours. If the oxytocin infusion was commenced as prophylaxis rather than treatment of PPH and if there are no concerns regarding bleeding or uterine tone, the infusion can be discontinued allowing for discharge from recovery.

9.11 A plan for VTE prophylaxis should be in place and documented on the drug chart appropriately. Any deviation from the algorithm needs to be fully documented in the maternal notes. *(see MP012 Venous Thrombosis protocol)*

9.12 When the mother or person who birthed is ready to be transferred to postnatal care she should be returned to the ward with clean pads, on a neat, clean and dry bed.

9.13 A qualified midwife or nurse should give handover to the midwife who will be taking over that patient's care, with completed documentation by the midwife (checklist completed and signed). A full set of pre-transfer observations (7.6-7.12) should be taken. The Post-Operative Monitoring Protocol fOr Maternity profile on Patienttrack should be initiated with this set of observations entered as the 1st set. Thereafter, observation frequency will be as per this profile (see below)

9.14 An anaesthetist, preferably the one who performed the anaesthesia, should be informed if the patient does not meet the discharge criteria.

9.15 If Oxygen saturation <95% in air patient requires oxygen therapy and the anaesthetist should be notified

9.16 If temperature outside normal range doctor should be informed

9.17 When assessing if a woman is fit for discharge or transfer the attending staff must document their assessment in the Obstetric Theatre and Recovery Care Pathway

10 Discharge and Transfer Criteria from Recovery Flowchart

1	**Observations In Recovery**			
	Duration indicated by procedure/risk (see table, 7.2)	Every 10 minutes for 1st 60 mins Every 15 minutes up to 90 mins	Every 30 minutes thereafter	
2	**Is the patient stable?** **No ↓**		**Yes ↓**	
	1) Prolonged stay in Recovery until stable 2) Frequent observations using the MEOWS Chart; to include: • BP and heart rate (pulse) • Resp rate, SpO_2 and if O_2 given • Sedation scores • Pain scores • Urine output		<u>When fit for discharge from Recovery/LW:</u> ALL women who have had spinal/epidural morphine OR diamorphine, or a CS must have: • Full set of obs just before transfer • Full set of obs 2hrs & 4hrs after transfer • 4 hourly observations thereafter until 24hrs post op • Obs must include SpO_2, resp rate &	

	• Blood loss: per vagina/wound,drain 3) Anaesthetic review 4) Obstetric review	sedation score (AVPU). • Record on post-op monitoring profile on patienttrack *Then…* Pulse, B/P, temp and respirations every 12 hours whilst in patient on ward (up to 48hours)

11 Care of Mothers in the 24 Hours Following Delivery Post Recovery

11.1 Post-operative period:

11.1.1 Defined as the first 12 hour period following surgical intervention.

11.1.2 Women should be observed for post-operative complications.

11.2 Observation regime: Women should not be transferred to the postnatal ward until the minimum duration of 1:1 care has elapsed (table 7.2). On occasions where there is no space in recovery and the caregiver feels it is safe, earlier discharge must be discussed with anaesthetist, obstetrician and midwife in charge and rarely this may be deemed appropriate; consideration of early discharge is not applicable to any patient who has received preservative free morphine by spinal/epidural route.

11.3 Urinary Catheter:

Removal of the urinary bladder catheter should be carried out once a woman is mobile after a regional anaesthetic, and able to mobilise to the toilet. Typically this is 12 hours after a spinal anaesthetic or the last epidural 'top up' dose[1], but it may be sooner. See *MP040 Bladder Care* for further information. Also see *MP050 Caesarean section (LSCS).*

12 Pain Scores and Pain Relief

12.1 Inadequate pain relief after surgery may contribute to negative perceptions of birth, chronic pain, and depression. Severe acute post-partum pain is associated with a 2.5-fold increased risk of persistent pain and a three-fold increased risk of post-partum depression compared to those with mild post-partum pain (11). Persistent post-surgical pain can be defined as pain which persists for more than two months after surgery (and may persist for years) and is reported to occur in up to 18% of women after caesarean section (12).

12.2 Pain scores should be measured regularly as part of the post-operative observations. The numerical rating scale (NRS) should be used. This allows patients to quantify the severity of their pain on a scale between 0 (no pain) and 10 (the worst pain imaginable).

12.3 All patients should receive regular analgesic drugs as prescribed on the drug chart post-operatively. The reason for any omission should be documented, and provisions should be made for alternative analgesia if required.

12.4 Paracetamol or ibuprofen may be given outside the prescribed times as long as there has been at least 4 hours since the last dose (this interval may be longer if intra-operative diclofenac has been given – and should be clearly indicated on the drug chart)

12.5 BSUH Guideline for Postoperative Analgesia in Obstetrics is available on the intranet

12.6 If it is difficult to achieve adequate pain relief in a mother she should be referred to the obstetric anaesthetist for review.

Also see Maternity Protocol MP050 Caesarean section (LSCS).

13 Laxatives for Constipation

13.1 Constipation is common in women after childbirth, and can be distressing for the mother. It has been reported to occur in up to 49% of women after caesarean delivery (13). The use of strong or weak opiates (dihydrocodeine, morphine, morphine sulphate immediate release oral solution oramorph) is usually necessary for pain relief, but this increases the risk of constipation. Simple measures to prevent constipation are unlikely to be effective, so the early use of regular laxatives is recommended.

13.2 All patients who have received opiates should receive regular laxative (BD) post-operatively unless there are concerns about bowel injury or an ileus.

14 Complications of Anaesthesia

14.1 Women with problems thought to be attributable to a complication of their anaesthetic should be referred to the obstetric anaesthetist for review. This might include headaches, back pain, numbness or weakness in the legs, difficulty passing urine or opening bowels.

15 Training

Please refer to the Training Needs Analysis document for details on staff training in relation to this protocol.

16 Monitoring Compliance

Please refer to the Monitoring and Auditing document for details on monitoring compliance for this protocol.

17 References

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14) Ramkumar D, Rao S S. Efficacy and safety of traditional medical therapies for chronic constipation: systematic review. *American Journal of Gastroenterology 2005; 100(4): 936-971.*