Ashford and St. Peter's Hospitals
NHS Foundation Trust

Elective CS list:
An Anaesthetic Standard Operating Procedure (SOP)

Background

- The list will run Monday – Thursday from 08:00 – 13:00, and will be published on Bluespier. It will be based in Main Theatre 1
- Only Category 4 caesarean deliveries will be performed in Main Theatre 1
- Occasionally, additional complexity will necessitate performing Cat. 4 deliveries in Maternity Theatre 2 (on LW). This will be alongside the unplanned Cat. 1-3 work, which continue on LW as per normal
- Cat. 4 deliveries should **NOT** be performed in Maternity and Main Theatres simultaneously
- **The main theatre Section List anaesthetist & LW anaesthetic team are expected to work together flexibly to ensure adequate coverage of skills across all areas of maternity care** (i.e. if LW team are conducting a Cat 4. Delivery in Maternity theatres, the Main theatre Section List team may be required to cover LW during this time)

Pre-operative

- Patients will arrive on Joan Booker Ward (JBW) from 07:00 on the morning of the procedure. They should already have had any necessary blood tests and COVID screening performed and have been given acid suppression therapy (omeprazole & metoclopramide)
- Easiwarm heated blankets will be supplied to all patients. They should be encouraged to use them in JBW and during transfer to theatres
- The team should aim to have assessed/consented the first patient and be ready to brief by 08:20
- If work intensity allows, the labour ward anaesthetic team should aim to assist in assessing the remaining patients in a timely fashion
- If a patient has undergone Maternity Anaesthetic Clinic assessment during their pregnancy the notes & any alterations to standard care will be in the BadgerNet notes under "Specialist Review (Anaesthetics)"
- All anaesthetists undertaking any maternity work will require a BadgerNet login. This can be organised by the LW team leader or by Chris Nelson (Lead Midwife for BadgerNet; chrisnelson@nhs.net)

Intra-operative

- Patient and birth partner will be transferred to main theatres, along with her bed and a volumetric pump (for postnatal oxytocin infusion)
- The patient and partner should be walked into theatre and the bed moved to recovery
- WHO Sign In from the Maternity-specific WHO Surgical Safety Checklist should be performed by the anaesthetist and ODP/AN (see appendix & posters in Main Theatre 1)
- IV access should be established (ideally 18G/16G) in a manner that facilitates comfortable holding of the new born after birth
- Monitoring placement should be facilitate easy skin-to-skin contact between mother and new born. ECG electrode placement away from the anterior chest wall is ideal. Similarly, removing the BP arm from the gown allows easy access to the chest after delivery
- Anaesthesia should only be administered when there are facilities to immediately delivery the new born in event of conversion from Cat. 4 to Cat. 1. This precludes the use of the anaesthetic room to anaesthetise while a patient is still on the operating table
- Neuraxial (Spinal or CSE) is the preferred anaesthesia of choice. If neuraxial procedures are contraindicated, the patient should have been seen in the Maternity Anaesthetic Clinic and a management plan included on BadgerNet. If in doubt, discuss with the labour ward anaesthetic consultant
- Adequate technique for neuraxial anaesthesia is as per standard (Full aseptic precautions with Gloves, Gown, Mask, Drape & 0.5% Chlorhexidine skin preparation). **Dose range for spinal anaesthesia is 2.4 – 3.0mL 0.5% HEAVY bupivacaine + 300 – 400mcg diamorphine**
- A block height of **T4 (cold)** & **T6 (light touch)** should be established before starting surgery
- If general anaesthesia is indicated, an “Obs friendly” technique should be used, including pre-induction sodium citrate and prepping, rigorous pre-oxygenation, rapid sequence induction and use of drugs that are suitable in breast-feeding women.
- The use of truncal blocks (e.g. TAP or Quadratus Lomborum) should be strongly considered in any patient who hasn’t received neuraxial opioid
- A small LEFT tilt must be applied to the table whenever the patient is laid supine. This should remain until delivery
- A phenylephrine infusion should be used to maintain BP within 20% of pre-spinal value. An infusion of 100mcg/mL phenylephrine can be started at a rate of 15mL/hr once the spinal has been administered. The rate can be titrated to 1 minutely BP readings.
- SSI Antibiotic prophylaxis should be given prior to starting surgery:
    - 1st Line: Cefuroxime 1g + Metronidazole 500mg IV
    - If penicillin allergy: Clindamycin 600 mg IV
- Intermittent Pneumatic Compression devices should be used during the procedure
- Normothermia should be promoted by the use of a fluid warmer for IV fluid infusions. Easiwarm blanket use should be continued during induction of anaesthesia and throughout the delivery. It should then be transferred with the patient into recovery. **If maternal temperature falls below 36.5°C, additional methods of warming is required**.
- At delivery of the anterior shoulder of the new born, 5 units of oxytocin should be administered slowly (approx. 2 units/min), followed by an oxytocin infusion (40 units oxytocin in 500mL 0.9% saline, administered through a volumetric pump at 125 mLs/hr)

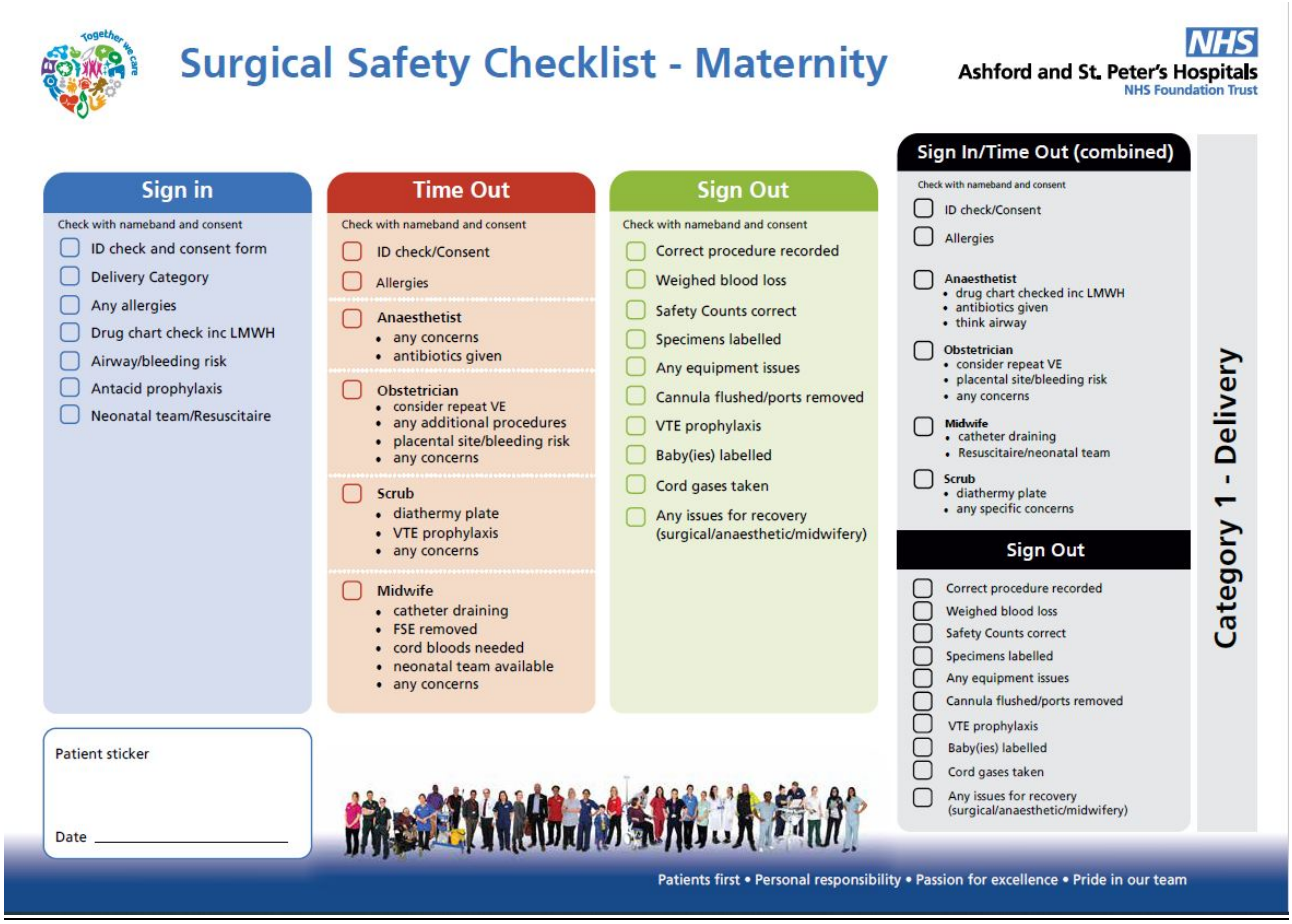
- If uterine tone is not adequate, a further dose of oxytocin or ergometrine/hemobate may be requested by the operating surgeon
- Prophylactic anti-emetics (8mg ondansetron) should be given after delivery
- Diclofenac suppository (100mg) should be offered, if not contra-indicated, at the end of the surgery
- The next patient should be sent for once the closure of rectus muscle has started. The patient can be brought on their bed into the anaesthetic room of Theatre 1. A screen must be used to restrict view from anaesthetic room into theatre until theatre is clear of the previous patient.

Post- operative care

- The following should be prescribed prior to the patient leaving theatre:
    - Post-op analgesia:
        - Paracetamol 1g PO QDS for 5-7 days (IV if NBM/vomiting)
        - Ibuprofen 400 mg PO QDS for 3 days, then 400mg PO TDS for 3-5 days, with food. If NSAID's are contraindicated then a weak opioid should be prescribed regularly (i.e. dihydrocodeine)
        - **Codeine must NOT be prescribed to breastfeeding women**
        - PRN: ORAMORPH 10-20 mg 2 hrly (+ PRN Naloxone 200mcg IV/IM/SC) & DIHYDROCODEINE 30-60mg 4hrly PO
    - Regular antiemetics: Ondansetron 4mg IV TDS for 24 hours
    - PRN antiemetics:
        - 1st line Ondansetron 4 mg IV/PO TDS
        - 2nd line Cyclizine 50 mg slowly IV/PO TDS
    - Laxatives: Macrogol 2 sachet OD PRN, or lactulose 15mls BD PRN
    - DVT prophylaxis:
        - Enoxaparin SC 4 hours post SPINAL, if surgical haemostasis is secured, followed by daily dose at 18:00 (or 6 & 18 if BD). Adjust dose according to body weight as per local policy (see appendix)
        - TEDS
    - PRN Oxygen to maintain $Sp0_2$ 94-98%
- **Documentation of the anaesthetic procedure MUST be done on BadgerNet.** This allows addition of the patient onto the "follow up" list for the following day. BadgerNet is available on multiple computers in Main Theatres and Recovery, and on provided iPads
- Milestones:
    - Time for first oral fluid: women should consume clear fluids early in recovery area if they are cardiovascularly stable, comfortable & not nauseous.
    - Time for first oral food intake: In PACU patients should be offered a snack. Lunch should be offered as soon as fluids and snacks are well tolerated.
    - Time for first mobilisation: as soon as the spinal block has worn off, there are no concerns for bleeding & woman feels comfortable.
        - As a rough guide, a straight leg raise whilst lying in bed should be possible 4 hours after spinal anaesthesia. **Failure to do this is a serious deviation from the norm and requires further assessment**
    - Time to urine catheter removal: Prior to 18:00 for women who were operated first on the list. At 6:00 the following day for all other cases.

Appendix

1) Maternity Surgical Safety Checklist



Surgical Safety Checklist - Maternity

Ashford and St. Peter's Hospitals NHS Foundation Trust

Sign in

Check with nameband and consent

- ID check and consent form
- Delivery Category
- Any allergies
- Drug chart check inc LMWH
- Airway/bleeding risk
- Antacid prophylaxis
- Neonatal team/Resuscitaire

Time Out

Check with nameband and consent

- ID check/Consent
- Allergies
- Anaesthetist
  - any concerns
  - antibiotics given
- Obstetrician
  - consider repeat VE
  - any additional procedures
  - placental site/bleeding risk
  - any concerns
- Scrub
  - diathermy plate
  - VTE prophylaxis
  - any concerns
- Midwife
  - catheter draining
  - FSE removed
  - cord bloods needed
  - neonatal team available
  - any concerns

Sign Out

Check with nameband and consent

- Correct procedure recorded
- Weighed blood loss
- Safety Counts correct
- Specimens labelled
- Any equipment issues
- Cannula flushed/ports removed
- VTE prophylaxis
- Baby(ies) labelled
- Cord gases taken
- Any issues for recovery (surgical/anaesthetic/midwifery)

Sign In/Time Out (combined)

Check with nameband and consent

- ID check/Consent
- Allergies
- Anaesthetist
  - drug chart checked inc LMWH
  - antibiotics given
  - think airway
- Obstetrician
  - consider repeat VE
  - placental site/bleeding risk
  - any concerns
- Midwife
  - catheter draining
  - Resuscitaire/neonatal team
- Scrub
  - diathermy plate
  - any specific concerns

Sign Out

- Correct procedure recorded
- Weighed blood loss
- Safety Counts correct
- Specimens labelled
- Any equipment issues
- Cannula flushed/ports removed
- VTE prophylaxis
- Baby(ies) labelled
- Cord gases taken
- Any issues for recovery (surgical/anaesthetic/midwifery)

Category 1 - Delivery

Patient sticker

Date _____

Patients first • Personal responsibility • Passion for excellence • Pride in our team

2) Weight-based LMWH Thromboprophylaxis dosing

Weight	**Enoxaparin**	Dalteparin	Tinzaparin (75 u/kg/day)
< 50 kg	**20 mg daily**	2500 units daily	3500 units daily
50–90 kg	**40 mg daily**	5000 units daily	4500 units daily
91–130 kg	**60 mg daily***	7500 units daily	7000 units daily*
131–170 kg	**80 mg daily***	10 000 units daily	9000 units daily*
> 170 kg	**0.6 mg/kg/day***	75 u/kg/day	75 u/kg/day*
High prophylactic dose for women weighing 50–90 kg	**40 mg 12 hourly**	5000 units 12 hourly	4500 units 12 hourly

*May be given in two divided doses