### Treating Postpartum Haemorrhage

#### Initial early recognition and action

**Call for help**
- Allocate roles
  - include care of baby, partner and family/whānau

**Assess and arrest bleeding**
- Lie woman flat
- Deliver placenta
- Massage fundus and expel clots
- Place baby skin to skin
- Administer uterotonics
  - Syntocinon 10iu IM or 5iu IV or Syntometrine 1ml IM (unless contraindicated)
  - Empty bladder

**Identify cause**
- Consider the 4Ts
  - Tone – uterine atony
  - Tissue – retained placenta
  - Trauma – lacerations or rupture
  - Thrombin – coagulopathy

**Minimise impact of blood loss**
- Insert large bore IV cannula (16g)
- Take blood for FBC, Group and Hold, Coags
- Give high flow oxygen
- Consult with specialist obstetrician regarding transfer
- Start rapid IV fluid replacement and commence with crystalloids (Normal Saline, Hartmann’s or similar)

**Maternal observations and clinical assessment**
- Assess and document:
  - blood pressure, pulse, respiratory rate, temperature, cumulative blood loss, fluid balance

**Blood loss stops and woman’s condition is stable**
- Continue observations and clinical assessments
- Document plan for ongoing care (including best location)
- Ensure woman has adequate level of observation by health professional or partner, family/whānau with access to health professional or emergency services
- Watch for further blood loss
- Check haemoglobin

### Ongoing significant bleeding

**Don’t delay transfer** to secondary/tertiary obstetric service if at home or in a primary unit
- Allocate care of baby to suitable person
- Commence Syntocinon infusion (40iu in Normal Saline 1000mls over 4 hours)
- Reconsider the 4Ts
- Apply bimanual compression to arrest blood loss
- Ensure senior obstetric and midwifery team present on arrival

**Call for additional support**
- Transfer care to senior obstetrician as per Referral Guidelines
- Summon anaesthetist
- Prepare theatre team
- Inform laboratory of major PPH
  - send blood to lab on arrival: FBC, Group & Hold, coagulation studies
  - request blood for transfusion

**Assess and arrest bleeding**
- Reconsider the 4Ts
- Assess cumulative blood loss
- Insert second large bore IV cannula (16g)
- Massage the fundus to expel clots and consider bimanual compression
- Insert indwelling catheter
- Administer Carprofen 250mcg every 15 minutes (maximum of 8 doses), IM or intraureterine or Misoprostol 800mcg, buccal or PR
- Consider EUA for
  - removal of retained placenta/products
  - repair of tear
  - intrauterine balloon or packing

**Resuscitation**
- Give crystalloids (maximum 2–3L)
- Give red cell transfusion as soon as possible
- Start transfusing O Neg red cells if urgent transfusion required until cross-matched blood available

**Maternal observations and clinical assessment**
- Assess and document:
  - blood pressure, pulse, respiratory rate, temperature, cumulative blood loss, fluid balance

**Blood loss stops and woman’s condition is stable**
- Continue observations and clinical assessments
- Document plan for ongoing care (including best location)
- Ensure 1:1 care
- Watch for further blood loss
- Check haemoglobin via FBC

### Ongoing uncontrolled bleeding

**Call for additional help**
- Senior obstetrician and senior anaesthetist clinically responsible for care
- Consult with haematologist/transfusion medicine specialist
- Transfer to operating theatre

**Assess and arrest bleeding**
- Reconsider the 4Ts
- Consider laparotomy
- Consider early recourse to hysterectomy
- Consider other options if appropriate:
  - uterine compression suture (+/- tamponade balloon/packing)
  - uterine artery ligation
  - internal iliac embolisation
  - aortic compression

**Resuscitation**
- Administer blood and blood products
- Trigger massive transfusion protocol (MTP) where available³
- Avoid hypothermia, hypocalcaemia and acidosis
- Use of cell saver where available
- Consider tranexamic acid
- Consider recombinant factor VIIa

**Maternal observations and clinical assessments**
- Consider arterial line or central venous line
- Assess and document blood pressure, pulse, respiratory rate, temperature, oxygen saturation:
  - document cumulative blood loss and accurate fluid balance (hourly urine output)
  - hourly FBC and coagulation studies

**Blood loss stops and woman’s condition is stable**
- Make plan for ongoing care
- Consider transfer to ICU

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1. Remember:
   - all health professionals consistently underestimate blood loss
   - healthy women compensate: tachycardia and hypotension are late signs
   - agitation or restlessness in women indicates hypovaemia.

2. Many units are using MTP; however the underlying principle of all the MTP is early recognition and prevention of worsening coagulation.

3. Carprofen can cause severe bronchospasm. Avoid in women with a history of asthma or bronchospasm.