

# Orientation MNH Guidelines Chapters: Postpartum Care and Obstetric Emergencies

## Postpartum haemorrhage

Prof Sue Fawcus

20 March 2024



# PPH: what's new/given more emphasis?

- ✓ Anaemia
- ✓ Tranexamic acid as part of first response
- ✓ Early detection and first response at 500mls (E MOTIVE)
- ✓ Refractory PPH (UBT vs STUT)
- ✓ NASG
- ✓ Updated PPH algorithms: after Vaginal delivery; at/after CS
- ✓ Massive Blood transfusion protocol (hospitals with/without blood banks)
- ✓ Respectful Maternity Care

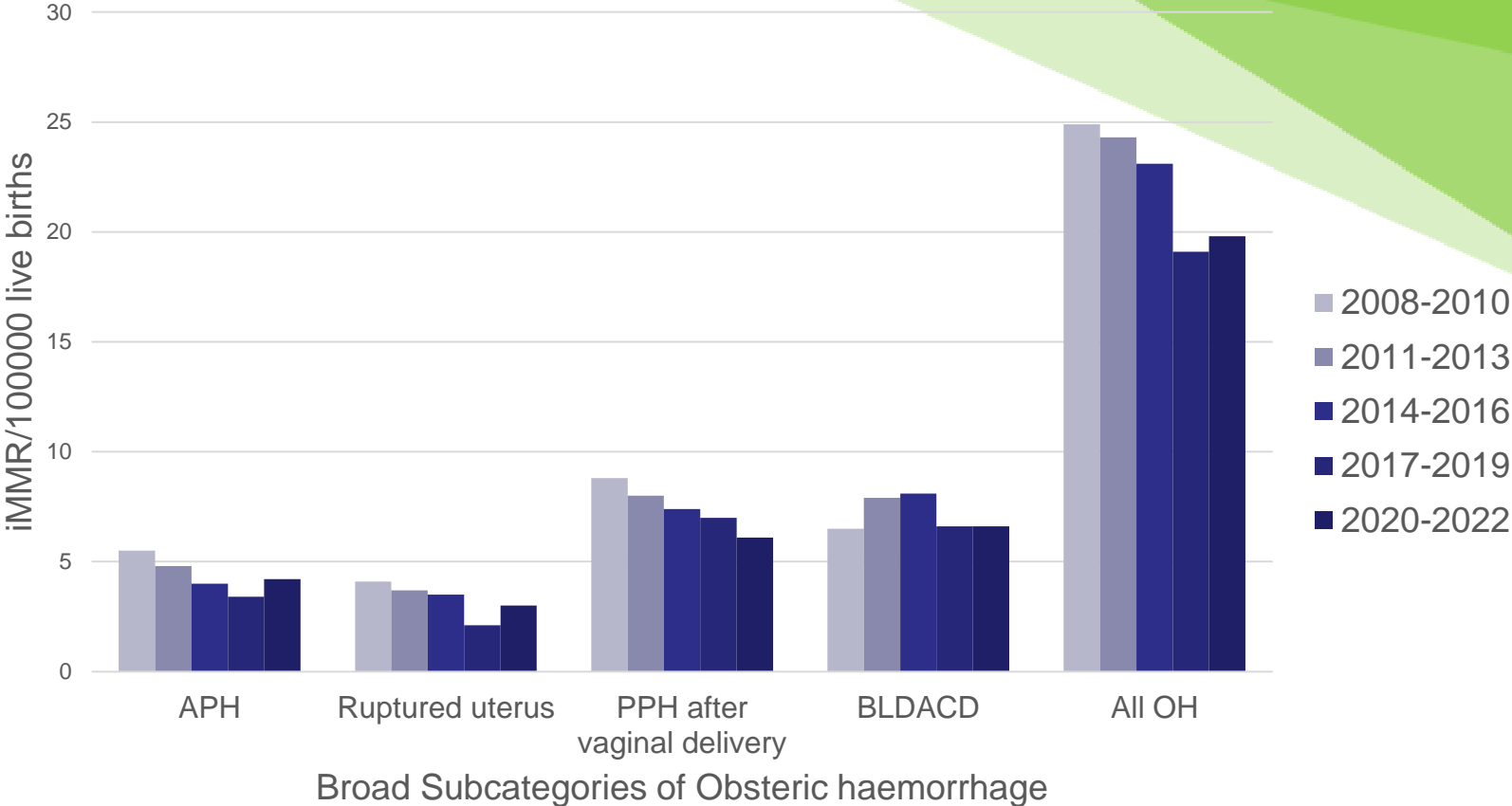


# SAVING MOTHERS REPORT FOR SOUTH AFRICA, 2020 – 2022

## ***OBSTETRIC HAEMORRHAGE***

- **Accounted for 599 maternal deaths in South Africa during 2020 – 2022.** (*16.4% of total deaths and the second most common cause of maternal death*)
- **Slow steady decrease in PPH maternal deaths since 2013, reversed in 2020-2021 due to Covid 19 impact, but reduced in 2022.**
- **85.5% were potentially preventable**  
(Problems: Administrative (Stockouts, Referral delays), Medical (Delay recognition, Lack of skills, Too Little Too late))

# Trends in sub-categories OH for 5 triennia (2008-2022)



# CAUSES of PPH

**AFTER VAGINAL DELIVERY. NB: the 3 Ts (Tone, Trauma, Tissue)**

- uterine aTony,
- Trauma (vaginal, cervical , perineal, or ruptured uterus)
- reTained placenta
- reTained products
- Following APH from placenta praevia, abruptio placentae
- Uterine inversion
- Anaemia (*new research shows that anaemia is a CAUSE of PPH*)

## **POST C SECTION BLEEDING**

Atony, trauma, placental site bleeding

*NB: Any of the above can lead to a coagulation disorder*

# Prevention of PPH

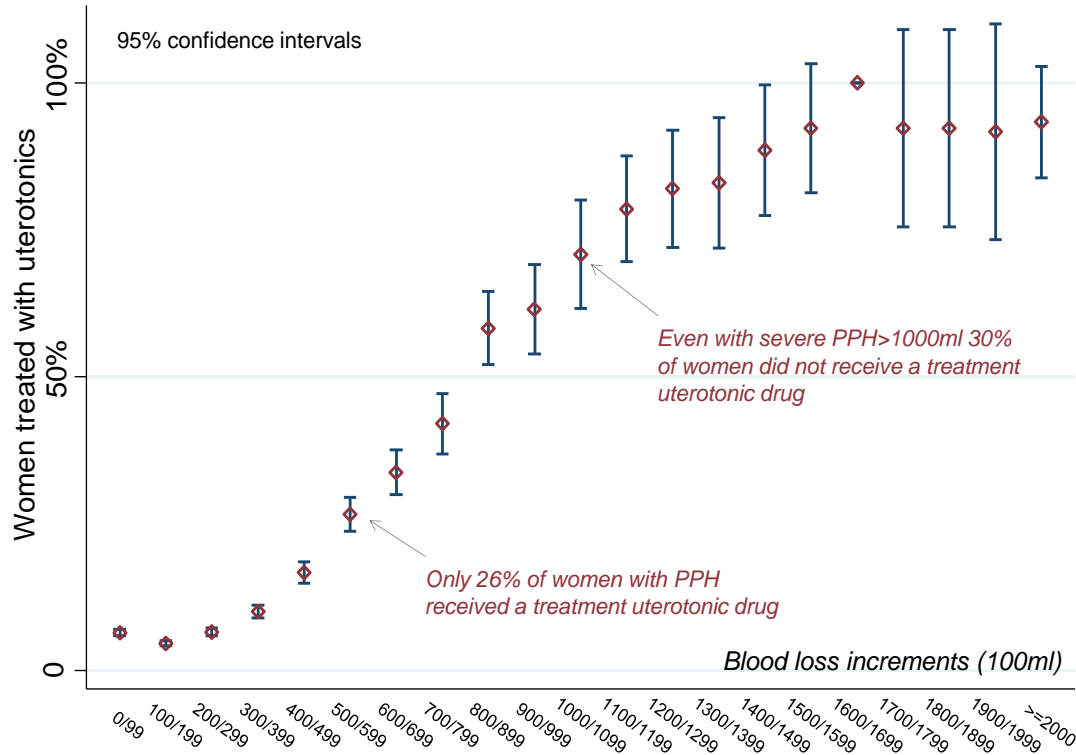
- Prevent anaemia in girls/women (*balanced diet, treating heavy menstrual bleeding and chronic infections*)
- Routine iron supplementation in pregnancy
- Anticipate / be prepared
  - Detect women at risk to deliver at referral hospital
  - Available supplies in PPH box- IV fluids, cannulae, oxytocics, internal tamponade. Blood products
- Prevent prolonged labour (use of the partogram)
- Active management of third stage of labour (*Oxytocin 10 IU im*)
- Routine postpartum and post caesarean section monitoring of vital signs and bleeding (*NB. Accurate and early detection prevents severe PPH/adverse outcomes*).

# Diagnosis of PPH

- ✓ Accurate Estimation Blood loss  $> 500\text{mls}$ , or clinical diagnosis of PPH (*Brisk bleeding, multiple clots etc*)
- ✓ Methods of measurement: collection of blood in drapes or trays, by visual estimation, weighing pads, and linen, suction bottles etc.
- ✓ Vital signs: HR  $>110$ , Sys BP  $<100$ , Shock Index  $>0.9$  (*NB: these are later signs*)
- ✓ Other late signs: pallor, confusion, restlessness
- ✓ Beware hidden bleeding

**NB:** 1-2 hrs observations after delivery in Labour ward with sign out to PNW

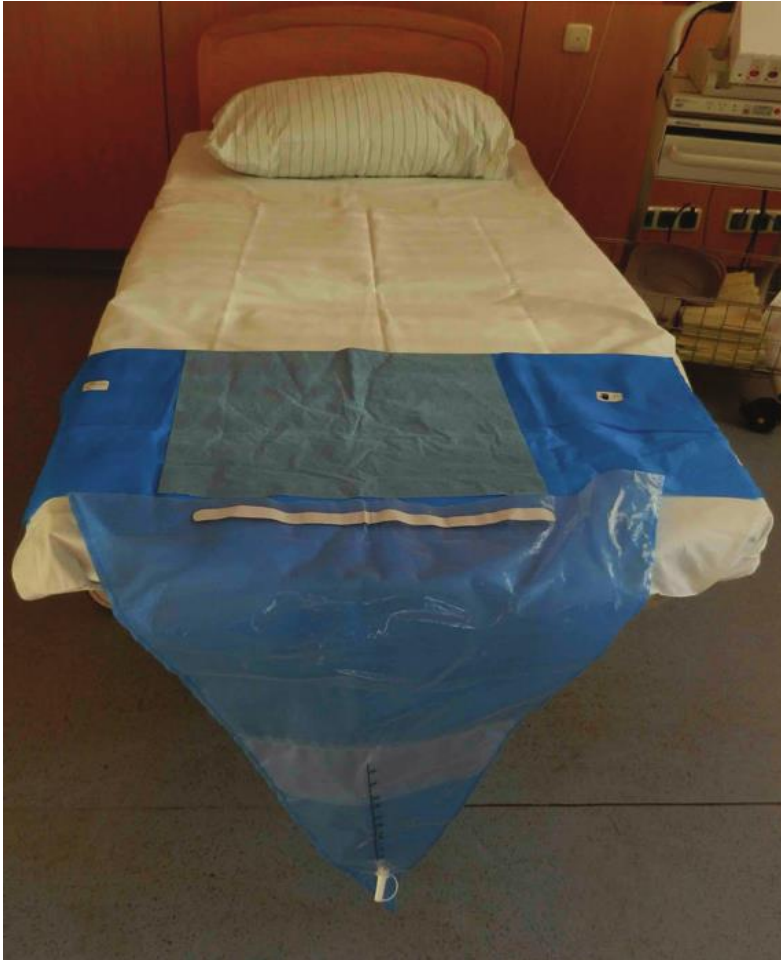
# CHAMPION trial: Most mild and severe PPH was not detected



*PPH is often not detected early; life-saving treatment is not promptly initiated* → Solution: Early detection and treatment of PPH



# EARLY DETECTION



# Post delivery monitoring chart in MCR

**OBSERVATIONS IMMEDIATELY AFTER DELIVERY**

Observations must be done every 15 min for 1 hour and then every 30 minutes for the next hour starting immediately after delivery. If the person is in a recovery area after Caesarean delivery, the recovery area staff must complete the observations.

Date & time of delivery: \_\_\_\_\_

Date	Time	BP	Pulse	Respiratory rate	Uterine contraction	Pad check	Oxytocin (rate)	Signature

**Classification of shock**

	Compensated shock (Class I)	Mild shock (Class II)	Moderate shock (Class III)	Severe shock (Class IV)
<b>Blood loss</b>	500-1000ml (10-15%)	1000-1500 ml (15-25%)	1500-2000ml (25-35%)	2000-3000ml (35-45%)
<b>Shock index*</b>	0.6-0.9	1	1.5	2
<b>Systolic Blood pressure</b>	Normal	Some changes in blood pressure	Marked ↓	Severe ↓
<b>Pulse</b>	< 100/min	< 120/min	> 120/min	>140/min
<b>Respiratory rate</b>	Normal	Mild increase	Moderate increase	Marked increase
<b>Mental status</b>	Normal	Agitated	Confused	Depressed level of consciousness

\*Shock index= heart rate/systolic BP (mmHg) (normal <0.5)

## Modified chart

### OBSERVATIONS IMMEDIATELY AFTER VAGINAL BIRTH

These observations must be commenced immediately after vaginal birth, and be done every 15 minutes for one hour, or longer if there is ongoing bleeding or any other complications

Date	Time	BP	Pulse	Respiratory rate	Uterine Tone	Vaginal blood loss observed <i>heavy flow or large blood clots or trickle or normal</i>	Vaginal blood loss* measured by calibration line in blood collection drape (mL)	Oxytocin infusion rate (if given)	Signature

\*NB. Measured cumulatively because drape remains in place

#### THE WHO FIRST RESPONSE PPH BUNDLE MUST BE TRIGGERED WHEN:

##### EITHER

A. Blood loss  $\geq$  500 mL observed in the funnel of the drape regardless of other observations or vital signs

##### OR

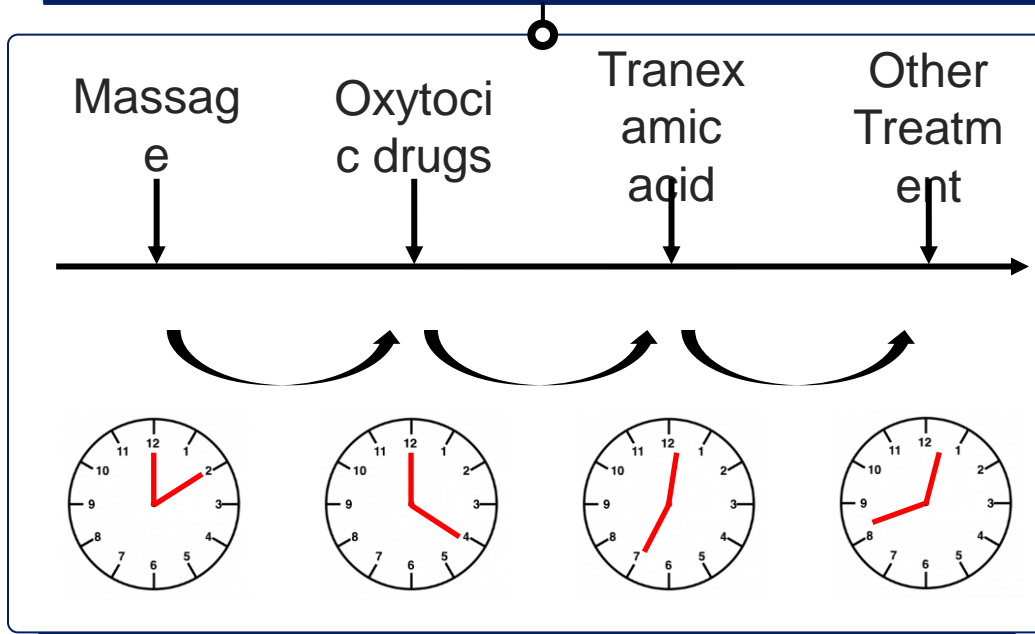
B. Clinical judgement – heavy vaginal blood loss, large blood clots, constant trickle, OR other clinical signs of excessive blood loss

# PPH – approach to management

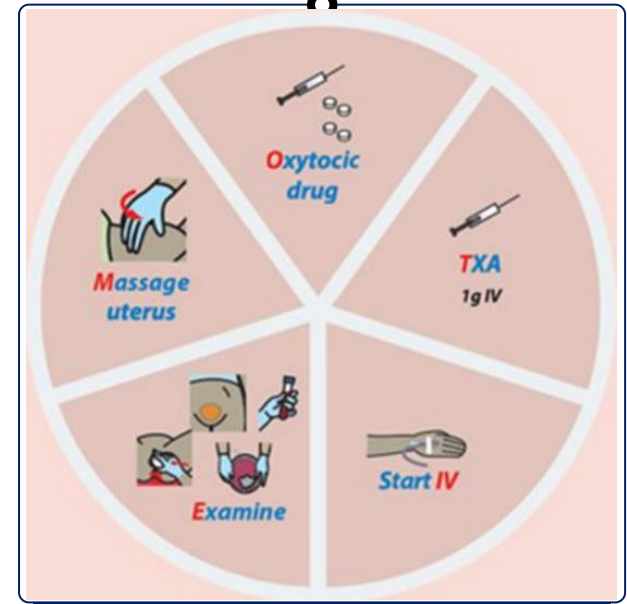
- ✓ **Accurate Early detection (E)**
- ✓ **Call for help and PPH box/ STAY with the patient**
- ✓ **First Response (MOTIVE)**
  - Includes: Resuscitation (CAB) and monitor vital signs*
  - Control and stop the bleeding (Massage, Oxytocin, TXA)*
  - Examine for cause of the bleeding (Atony, Trauma, Ret.Plac)*
  - Early Escalation*
- ✓ **Refractory PPH (E)**

# Missed or delayed treatment







Usual care: sequential treatment



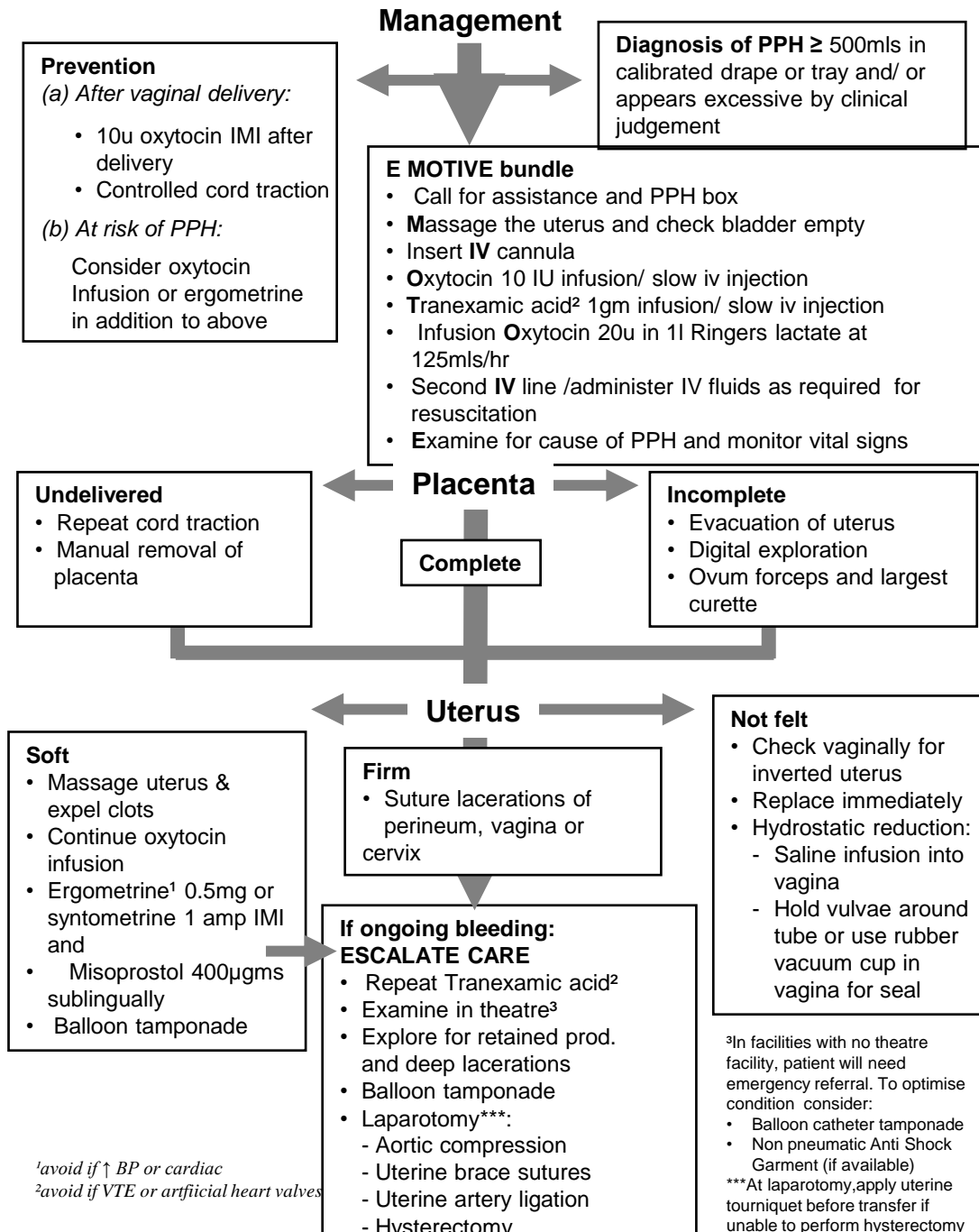
WHO 'MOTIVE' bundle



# Intervention: WHO MOTIVE bundle

Early detection & trigger criteria  <b>E</b>	Massage of uterus  <b>M</b>	Oxytocic drugs  <b>O</b>	Tranexamic acid  <b>T</b>	IV fluids  <b>IV</b>	Examination & escalation  <b>E</b>
<ul style="list-style-type: none"> <li>• 15 min observation</li> <li>• Monitoring charts</li> <li>• PPH Triggers</li> </ul>	<ul style="list-style-type: none"> <li>• Massage until uterus has contracted or for one minute</li> </ul>	<ul style="list-style-type: none"> <li>• 10 IU IV oxytocin injection or diluted in 100-200ml crystalloid over 10 minutes plus maintenance dose of 20 IU IV oxytocin diluted in 1000ml saline over 4 hours</li> </ul>	<ul style="list-style-type: none"> <li>• 1g IV injection of tranexamic acid or diluted in 100-200ml crystalloid over 10 minutes</li> </ul>	<ul style="list-style-type: none"> <li>• IV fluids in addition to the infusion should be given if clinically indicated for resuscitation and will require a 2nd IV access</li> </ul>	<ul style="list-style-type: none"> <li>• Ensure bladder is empty, evacuate clots, check for tears with an internal Examination and placenta exam</li> <li>• Escalate if bleeding does not stop</li> </ul>

# PPH after Vaginal Delivery: ESMOE (plus EMOTIVE)



# Observations after PPH

Pulse rate, Blood pressure  
Vaginal bleeding (pad checks)  
Urine output and temperature)

*Should be performed more frequently in an area where health care professionals can do the observations regularly*

**EARLY RECOURSE TO THEATRE  
DO NOT WAIT AND SEE**







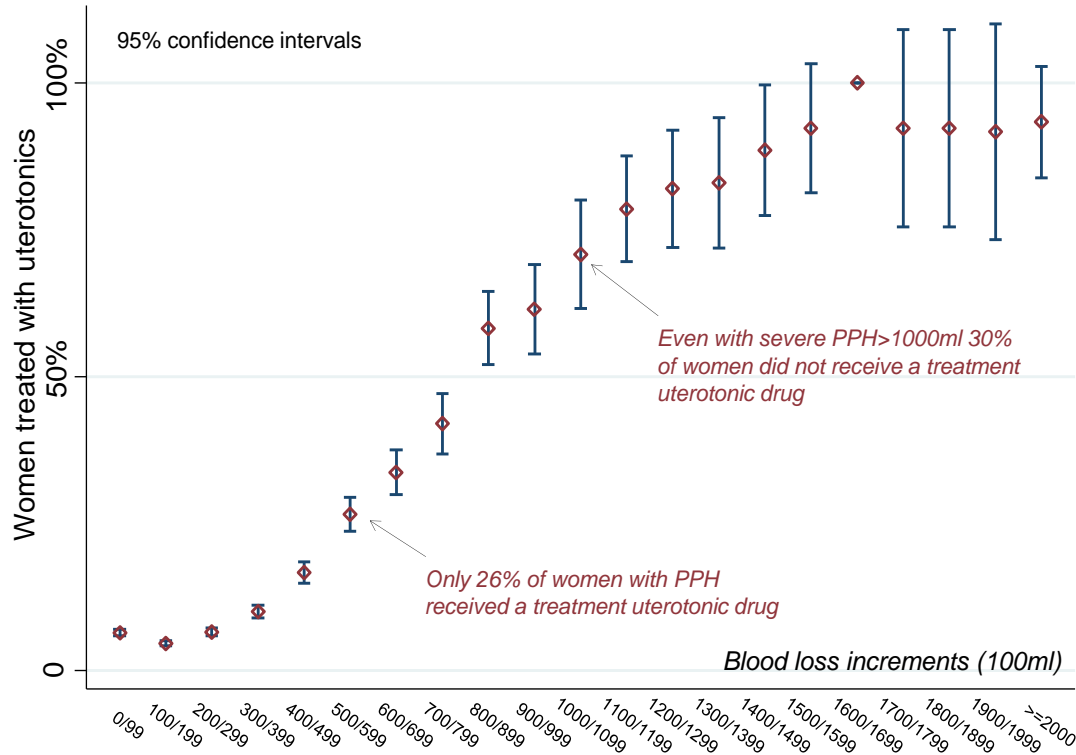
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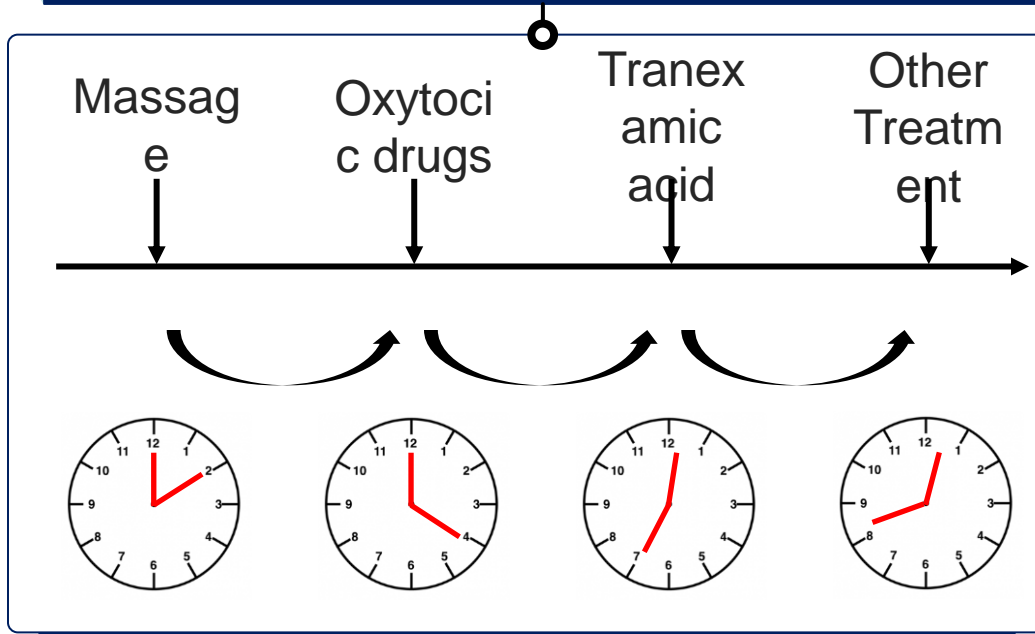
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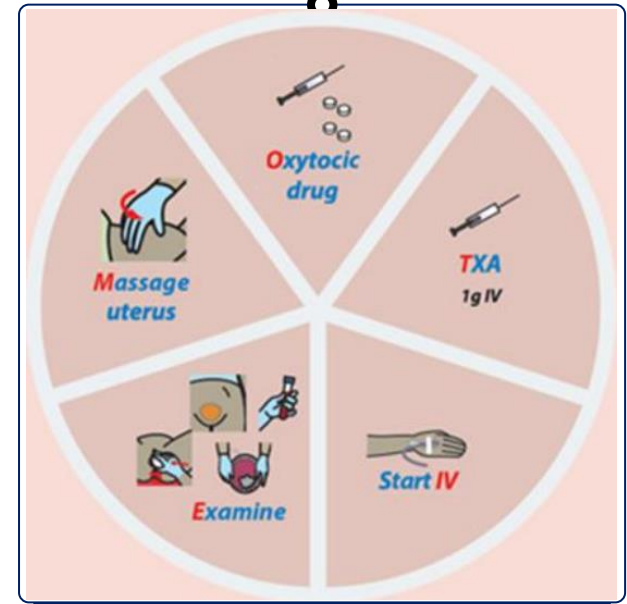
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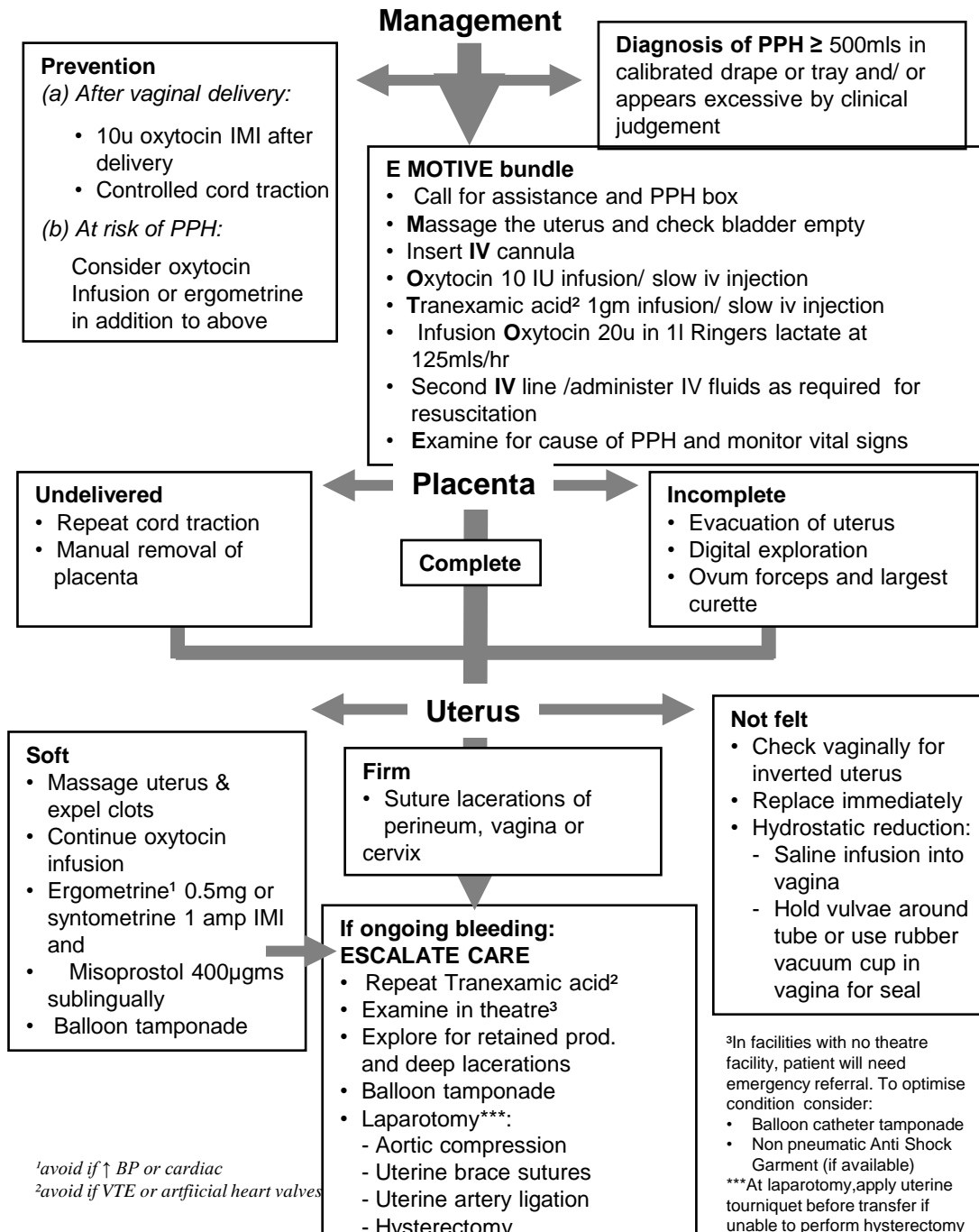
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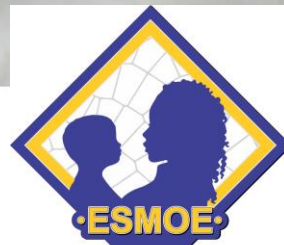
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**EARLY RECOURSE TO THEATRE  
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# Transfer of unstable patients ?

- District hospital: Transfer or treat?
- Importance of resuscitation measures to have been commenced and some temporising measures to arrest bleeding initiated before and continued during referral.
- Temporising measures:
  - Uterine tamponade
  - Uterine tourniquet with foleys catheter
  - Non-Pneumatic Anti-Shock Garment (*NASG*)

# Non-pneumatic Anti Shock Garment (NASG)



# Refractory PPH

- ✓ Bimanual compression
- ✓ Aortic compression
- ✓ Repeat Tranexamic acid
- ✓ Syntometrine im (not if ↑BP or cardiac)
- ✓ Misoprostol 400-600mcgms sublingually
- ✓ Further examine for other causes, eg CX tear, RPOC
- ✓ Uterine balloon tamponade (or suction tamponade)
- ✓ Examination under Anaesthesia(EUA)
- ✓ Laparotomy
- ✓ Continue resuscitation/ blood products Point of care tests and early use of fibrinogen in massive PPH

**Do not delay**

# Balloon tamponade systems\*

'Home – made' systems:

Condom catheter balloon

Surgical glove balloon

'Ready – made' systems (store items)

Bakri balloon

Rusch catheter

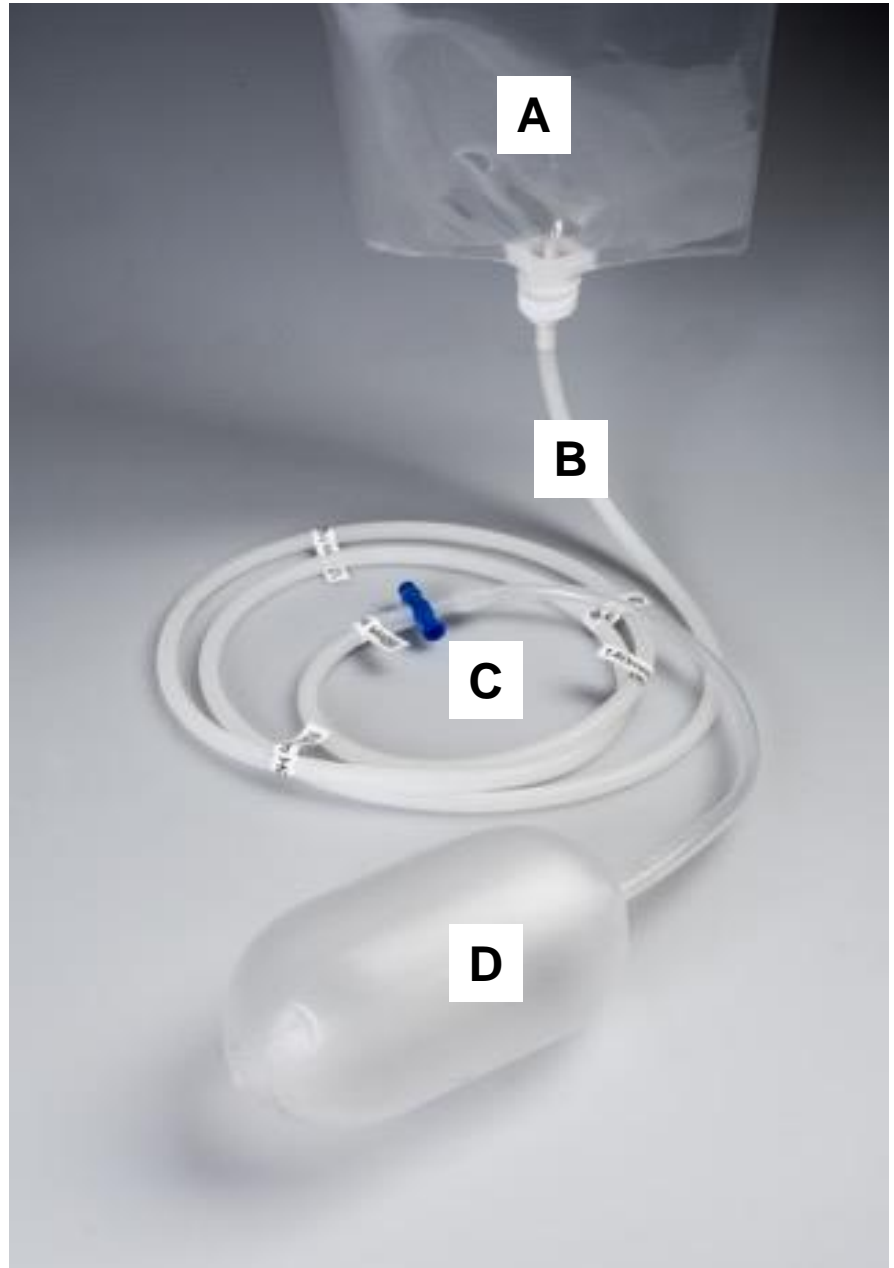
Ellavi balloon\*\*

\* *Closed or open systems*

\*\* *Cheaper locally made version of the glove balloon system*

# Ellavi uterine balloon

- A. Supply bag
- B. Calibrated tubing
- C. t-valve
- D. Uterine balloon



# Alternatives to Balloon tamponade?

WHY?

Many case series show benefits with BT

Two RCTs show can delay definitive treatment, especially if used in presence of trauma and for too long; and not improve outcomes.

WHAT?

Uterine suction devices; still being researched

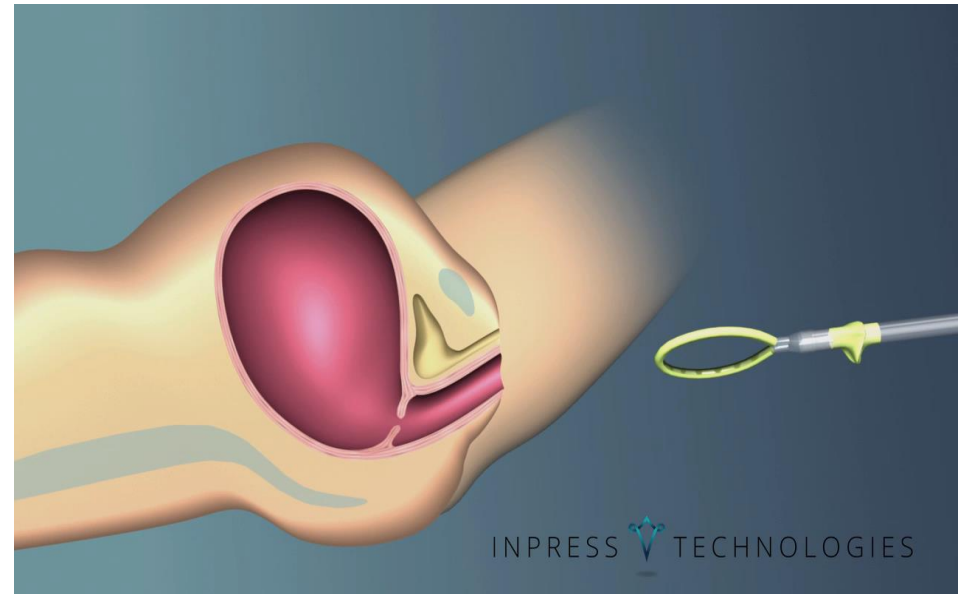
Ram Panicker device



Levin stomach tube



Inpress (JADA)

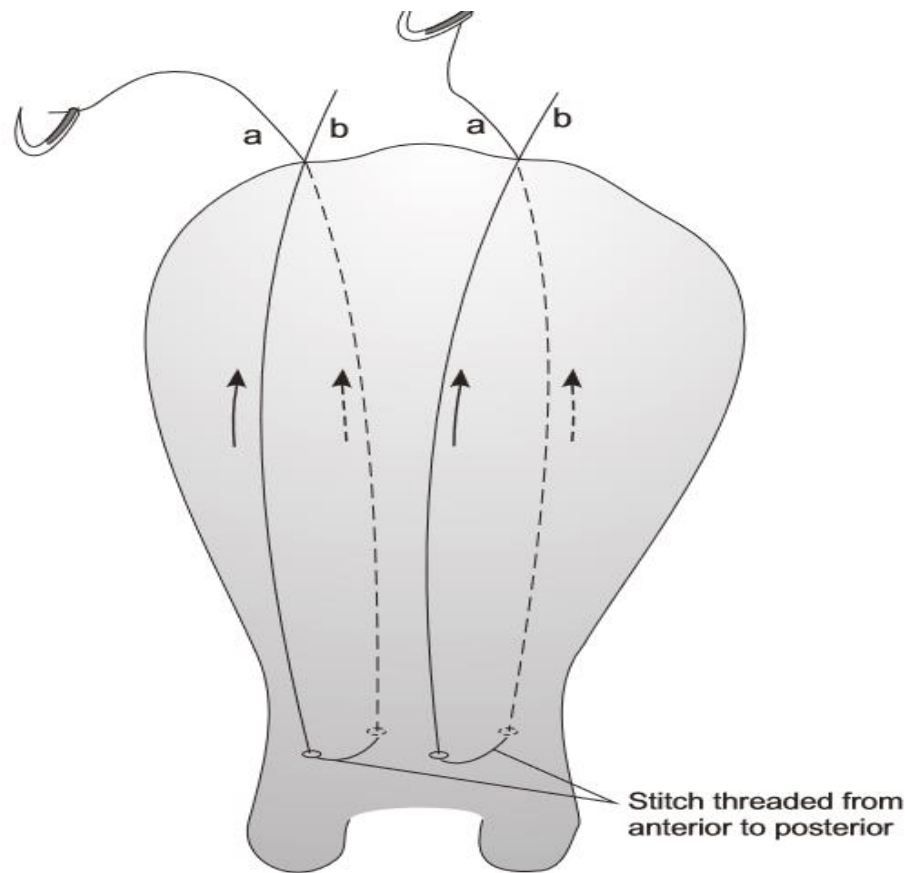




# Laparotomy: further measures to stop bleeding

- ✓ Compression of the aorta
- ✓ Uterine compression suture (eg Hayman)
- ✓ Uterine vessel ligation
- ✓ Hysterectomy or uterine tourniquet (*Skill not available for hysterectomy*)

# Uterine compression sutures (no uterine scar)



Tie a and b tightly together as assistant compresses uterus

(Adapted from: *A textbook of postpartum haemorrhage*. Ed B Lynch C et al. Ch 21, p181. Sapiens publishing 2006)

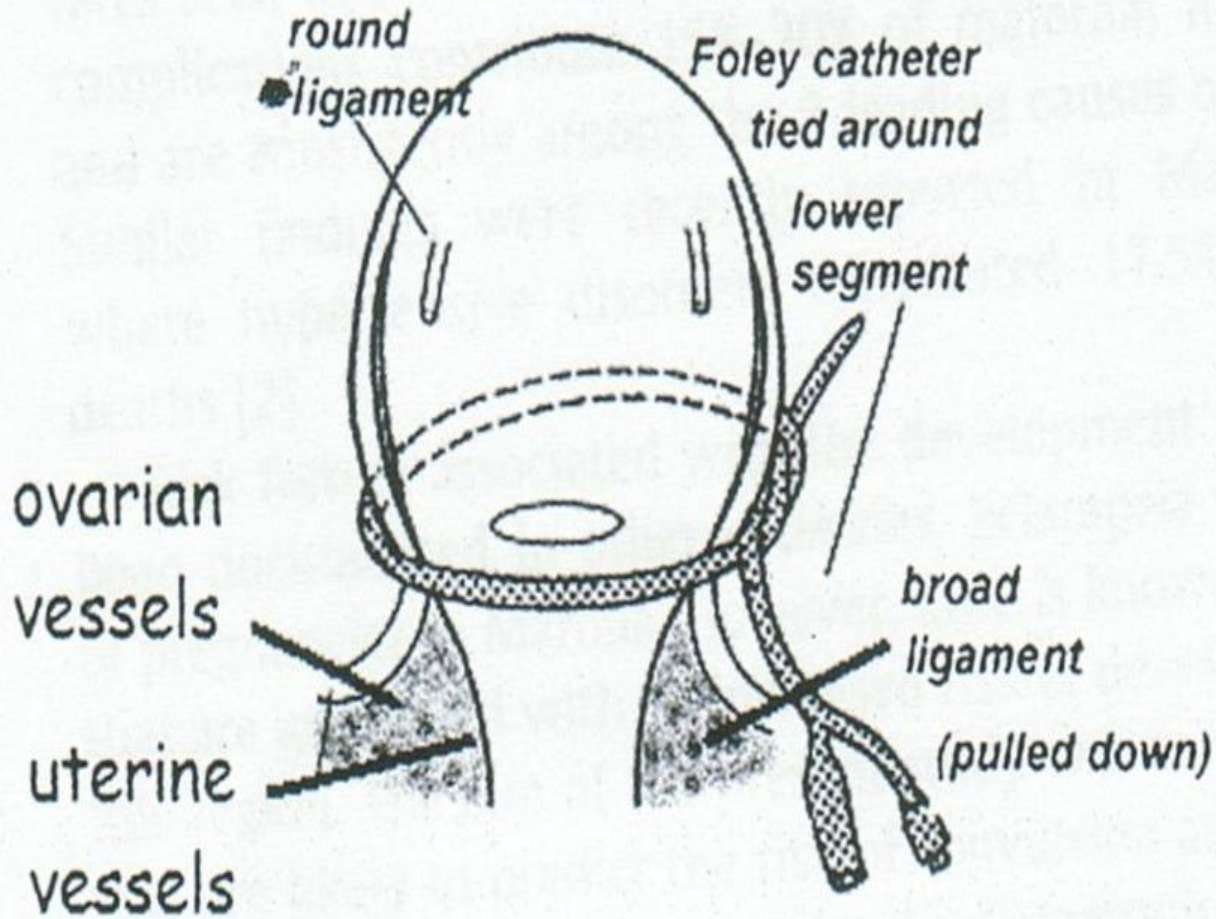


Fig. 1. Diagram of the tourniquet position.

*This technique is useful while awaiting senior help or for transfer if lack skill for TAH*

# Recap

- Prevention and Be prepared
- EARLY Detection of PPH
- FIRST response: MOTIVE (Immediate management bundle)
- Be ahead with resuscitation and Blood products
- Early escalation for Refractory bleeding (Medical, Mechanical, or Surgical treatment)
- Continuous monitoring during and after PPH
- Precautions for Referral of patients with haemorrhage
- Respect and communication during emergencies
- Debriefing patient and staff

# **SKILLS TRAINING** *(on site or district workshops)*

1. Accurate detection of blood loss with collection drape or tray and PPH triggers
2. MOTIVE first response
3. Bimanual compression, Aortic compression, Exploration of genital tract
4. Manual removal of placenta
5. Insertion balloon tamponade
6. Laparotomy: uterine compression sutures, vessel ligation, uterine tourniquet, (STAH)
7. Application of NASG