Evidence-based guideline — Postpartum Hemorrhage (PPH)

Prepared by

Dr Maniza Khan

MBBS, MRCOG( UK)

Specialist

Asgar Ali Hospital

Scope & Purpose

To provide clear, actionable steps for prevention, early recognition, initial management and escalation for women with PPH in labour wards and maternity units. Applicable to all births (vaginal and caesarean).

1. Definition & diagnosis

Primary PPH: blood loss ≥500 mL within 24 hours after vaginal birth, or ≥1000 mL after caesarean birth, or any blood loss causing haemodynamic instability. Use quantitative blood loss (QBL) rather than visual estimate whenever possible.

1. Prevention (Active management of third stage)

Offer active management of the third stage of labour (AMTSL) to all women unless contra-indicated:

1. Give oxytocin (10 IU IM or slow IV) immediately after birth of the baby (or IV infusion

10–40 IU in 1 L crystalloid per local policy),

1. Controlled cord traction, and

1. Uterine tone assessment and uterine massage as indicated.

AMTSL reduces PPH incidence and is recommended as routine prevention.

1. Early recognition — monitoring & trigger

Monitor for excessive bleeding, uterine atony, persistent drainage, hypotension, tachycardia, falling hemoglobin, or poor uterine tone. Use QBL and set local triggers for escalation (example: cumulative QBL >500 mL + ongoing bleeding or clinical instability → active PPH pathway).

1. Initial (first-line) resuscitation & simultaneous management (within 0–10 minutes)

Perform simultaneously — do not wait for lab results.

1. Immediate resuscitation

Call for help and activate PPH/massive hemorrhage team. Ensure senior obstetrician, anaesthetist, midwife and blood bank are informed.

1. Basic measures

Establish two large-bore IV lines, send bloods (FBC, group & save/crossmatch, coagulation, fibrinogen, blood gases), monitor vitals and urine output, give O₂ and position patient (left lateral tilt if pregnant).

1. Uterine atony measures (most common cause)

1. Uterine massage immediately; empty bladder (catheter) if full.

1. First-line uterotonic — oxytocin: bolus/infusion as above if not already given (10 IU IM or 5–10 IU slow IV bolus or IV infusion per local protocol). If already given for AMTSL, proceed to next uterotonics.

1. Adjunct uterotonics (give quickly if bleeding continues)

Ergometrine (unless hypertensive): e.g. 0.2 mg IM/IV (follow local dosing).

Carboprost (15-methyl PGF2α) 250 mcg IM repeated every 15–90 min up to 8 doses (not if asthmatic).

Sublingual misoprostol 400–800 mcg may be used where other uterotonics not available (WHO/FIGO/FOGSI recommendations for low-resource settings).

Use local formulary and contraindications.

1. Tranexamic acid (TXA)

Give TXA 1 g IV infused over 10 min as early as possible if PPH is ongoing and within 3 hours of birth; repeat 1 g if bleeding continues after 30 minutes or restarts (WOMAN trial / FIGO/ACOG support). TXA is an important early adjunct to uterotonics.

1. Secondary interventions if bleeding continues after initial measures (10–30 min) Bimanual uterine compression (temporary haemostasis).

Intrauterine balloon tamponade (Bakri or condom catheter technique) — effective as uterine-sparing salvage measure for atony or bleeding from lower segment. Consider immediate insertion in uncontrolled bleeding while preparing definitive therapy.

Tranexamic + uterotonics + tamponade combination often effective; monitor for haemodynamic improvement.

1. Escalation to surgical/interventional radiology (30–60 min) — when to escalate

Escalate early if major ongoing bleeding, coagulopathy, hemodynamic instability, or failed conservative measures.

Options (in recommended order depending on local resources and skill mix):

1. Examine in theatre under anaesthesia — inspect birth canal, uterine cavity, suture any genital tract lacerations, remove retained tissue.

1. Uterine compression sutures (B-Lynch, Hayman, others) for atony refractory to medical/tamponade measures.

1. Uterine artery ligation or hypogastric artery ligation (surgeon experienced).

1. Interventional radiology — uterine/ internal iliac artery embolization (if available, and patient stable enough for transfer).

1. Peripartum hysterectomy if life-threatening haemorrhage not controlled by above measures — do not delay if irreversible.

1. Blood products & transfusion

Use massive transfusion protocols (MTP) where available. Early involvement of transfusion service is essential.

Transfusion guided by clinical status and point-of-care coagulation tests (e.g., ROTEM/TEG) where available. Aim to correct hypovolaemia, coagulopathy and low fibrinogen promptly.

Target fibrinogen: in obstetric hemorrhage, fibrinogen <2 g/L suggests poor prognosis; consider FFP/cryoprecipitate or fibrinogen concentrate per local protocol.

1. Coagulopathy & laboratory guidance

Monitor Hb, platelets, PT/INR, aPTT, fibrinogen, and acid/base status. Treat coagulopathy early (FFP, platelets, cryoprecipitate/fibrinogen) guided by labs or viscoelastic testing.

1. Documentation, debrief & follow-up

Document estimated/quantified blood loss, timeline and all interventions, drugs and doses, personnel involved and blood products given.

Post-stabilisation: monitor for anaemia, infection, and complications. Arrange debrief for team and patient; review case in maternal morbidity/mortality or PPH audit meeting.

Consider thromboprophylaxis once bleeding controlled.

1. Systems & quality improvement (bundle approach)

Implement PPH bundle: risk assessment antepartum, AMTSL, QBL, PPH escalation protocol, emergency drugs & equipment pack, simulation training and availability of MTP and interventional options. National/regional projects (FIGO/OGSB/FOGSI) show bundle implementation reduces PPH mortality. Train staff regularly with drills.

1. Low-resource / community considerations

Misoprostol (400–600 mcg oral or sublingual) recommended where oxytocin is unavailable for PPH prevention and treatment; ensure referral pathways and postpartum follow-up. Community distribution policies (e.g., for home births) should follow national guidance (FOGSI/NHM/OGSB).

1. Key practical summary (action checklist)

1. Prevent: AMTSL (oxytocin).

1. Recognise & quantify: use QBL; trigger PPH team early.

1. Simultaneous steps: call for help, IV access, fluids/bloods, uterine massage, oxytocin, TXA within 3 hours.

1. Escalate: balloon tamponade → compression sutures/artery ligation/embolization → hysterectomy if needed.

1. Use bundle & drills to maintain readiness.

PPH Bundle — Brief Evidence-Based Guideline (with References)

1. Readiness

Hemorrhage cart (uterotonics, TXA, IV fluids, balloon tamponade).

Massive transfusion protocol (MTP).

Staff drills, role assignment, posted flowcharts.

1. Recognition & Prevention

Active Management of Third Stage of Labour (AMTSL): oxytocin first-line.

Quantitative blood loss (QBL) instead of visual estimation.

Risk assessment on admission + continuous monitoring.

1. Response

Stage-based escalation:

Stage 1: Uterotonics, uterine massage, IV access, labs.

Stage 2: Additional meds, TXA within 3 hrs.

Stage 3: Balloon tamponade, surgery, hysterectomy, MTP.

1. Reporting & Learning

Debrief after each event.

Multidisciplinary audit using OGSB tools.

13. primary references

RCOG Green-top Guideline No. 52 — Prevention and Management of Postpartum Haemorrhage (2016/2017).

ACOG Practice Bulletin No. 183 — Postpartum Hemorrhage (2017).

FIGO / global updates on PPH management and FIGO/SAFOG/OGSB implementation reports.

FOGSI (AICOG) updated PPH prevention & management documents / NHM guidance

(India).

OGSB standard clinical management protocols and national PPH bundle materials (Bangladesh).