MA-02 Bleeding after birth: the leading killer and every tool against it

HEALING after the FALL, research library, MA-02

Researched 10 October 2026 by Claude Opus agent for THRIVING after the FALL, Book Four. Library document, unverified.

How to read this document

This report tests every tool against bleeding after birth (postpartum haemorrhage, PPH) in order of means: hands, hearth, garden, salvaged drugs. It builds on the wound report for shock and oral fluids (THRIVING library, WO-01) and on the kits report, which found that oxytocin fails assay in about half of low-income samples and that misoprostol is the shelf item (THRIVING library, FO-11). MA-01, MA-09, ME-07, ME-09 and NU-02 were not yet in the library. [VERIFY] marks my own inferences and leads I could not confirm.

Three warnings run through it. No drug that makes the womb contract may be given before the baby, and any second baby, is born. Every tool here only buys time, because none replaces transfusion or surgery. And the order of actions matters more than any single tool: E-MOTIVE cut severe outcomes by 60% by detecting early and doing the old things together (Gallos 2023).

1. Findings by section

1.1 The size of the killer

Share of deaths. A WHO systematic analysis of maternal deaths from 2003 to 2009 found haemorrhage the largest single cause, at 27.1% of 2.4 million deaths worldwide, about 661,000 women in seven years (Say 2014). The WOMAN trial authors put postpartum haemorrhage at about 100,000 deaths a year (WOMAN Trial Collaborators 2017). The WHO, launching new guidance on 5 October 2025, gave a lower figure of nearly 45,000 deaths a year (WHO 2025). Methods and years differ. The brief's "about a quarter" stands.

How common. A systematic review of 120 datasets covering about 3.8 million women found PPH (500 mL or more) in about 6% of births and severe PPH (1,000 mL or more) in 1.86% (Carroli 2008). Most of those women had some treatment, so the untreated rate is likely higher [VERIFY].

How fast. The brief's "kills within 2 hours" is usually attributed to Maine 1991 in the Safe Motherhood Action Agenda. I found the title of its table of intervals from onset to death but could not read the table [VERIFY]. A Cochrane review states that untreated PPH can kill through shock within two to six hours (Diaz 2018). The WOMAN trial gives the best modern timing. Of 483 deaths, 374 (77%) came within 24 hours of entry and 43 (9%) within the first hour. Bleeding caused 346 of the deaths (72%) (WOMAN Trial Collaborators 2017). Those women were in hospital.

Untreated case fatality. No figure for wholly untreated PPH exists. Proxies: - An Indiana religious group that avoided all obstetric care had a maternal death rate about 100 times the state rate (Kaunitz 1984), not broken down by cause. - A retained placenta carries a case fatality of up to 10% in less developed countries (Weeks 2008). - In

the WOMAN trial placebo arm, 1.9% of women with PPH died of bleeding despite hospital care (WOMAN Trial Collaborators 2017).

My inference: with severe PPH and no drugs, compression or transfusion, the risk of death is a large multiple of the 1.9% hospital figure, plausibly one in ten to one in three [VERIFY].

What a village should expect. Taking a birth rate of about 30 per 1,000 people a year [VERIFY], a village of 300 sees about 9 births a year and a district of 3,000 about 90. At the Carroli rates the village sees a PPH of 500 mL about once every two years and a severe one about once every six years. The district sees about five PPHs and one or two severe ones a year [VERIFY: arithmetic inference]. A village healer may go years without seeing one, so skills must be drilled.

1.2 How much blood is too much, and how does a lay attendant know?

The thresholds. The classical definition is 500 mL within 24 hours, with 1,000 mL severe (Liabsuetrakul 2018, Carroli 2008). In October 2025 the WHO, FIGO and the International Confederation of Midwives lowered the trigger: PPH is now diagnosed at 300 mL if any abnormal sign is present (pulse over 100, shock index over 1, systolic pressure under 100 or diastolic under 60), or at 500 mL regardless. The guideline stresses vigilance in the first 2 hours after birth (WHO 2025, FIGO 2025). Hesperian puts it in kitchen terms: 500 mL, about 2 cups, is too much (Hesperian, A Book for Midwives, ch. 14).

The error of the eye. Visual estimation errs, and in both directions. - In Belgaum, India, visual estimates in 123 women were 33% lower than the measured loss in a calibrated drape. The drape correlated with photospectrometry at r = 0.92 (Patel 2006). - The brief's upper bound of a half was not found in a source I read [VERIFY]. - The opposite error also happens. In a 2022 simulation, providers guessed a 500 mL loss at 1,208 mL on average (Athar 2022). The error is noise, not a constant to correct for.

The calibrated drape. A plastic drape slipped under the buttocks collects blood in a graduated pocket. A Cochrane review found two trials. In India, among 900 women, the drape detected loss over 500 mL more often (RR 1.86). In a European cluster trial of over 25,000 women, using the drape instead of visual estimation made no difference to outcomes (Diaz 2018). Only measuring that triggers action helps.

E-MOTIVE. This trial randomised 80 secondary hospitals in Kenya, Nigeria, South Africa and Tanzania, covering 210,132 vaginal births. The intervention was a calibrated drape plus a bundle given together: uterine Massage, Oxytocic drugs, Tranexamic acid, Intravenous fluids, Examination of the genital tract, and Escalation. The trigger was 500 mL, or 300 mL with an abnormal sign. The primary outcome (severe PPH of 1,000 mL or more, laparotomy for bleeding, or death from bleeding) fell from 4.3% to 1.6%, a risk ratio of 0.40 (95% CI 0.32 to 0.50) (Gallos 2023). The control hospitals had the same treatments. What changed was early detection and doing everything together, and much of that is hands and order.

After the Fall. A plastic or oiled-cloth funnel draining into a bowl marked with water at 300 and 500 mL can imitate the drape [VERIFY: my inference, untested]. Soaked cloths can be weighed, taking 1 g as about 1 mL, minus the dry weight [VERIFY: not read in a primary source]. Without either, act on the woman, not the puddle: a soft womb, a continuing trickle, a rising pulse or a pale, sweating, restless woman means PPH.

Signs of shock by hand. The ICRC shock classes and their limits are in the wound report (THRIVING library, WO-01). For birth: - Count the wrist pulse for 15 seconds, times 4. Over 100 is abnormal (WHO 2025). After a normal birth the shock index (pulse divided by systolic pressure) has a median of about 0.66, with most women between 0.52 and 0.89 (Nathan 2016). A shock index of 0.9 or more is a sensitive alarm, and 1.7 or more predicts need for intensive care (Nathan 2015). It needs a blood-pressure cuff, which is worth salvaging. - By hand: fast weak pulse, cold clammy skin, pale lips and inner eyelids, thirst, fast breathing, restlessness, then confusion. Trend matters

more than one reading (THRIVING library, WO-01). - Hesperian advises checking the womb every 5 to 10 minutes for the first hour, then every 15 to 30 minutes for the next one to two hours (Hesperian, A Book for Midwives, ch. 14).

1.3 Hands: massage, the breast and the bladder

Most PPH comes from a womb that does not contract (atony). Hands work on tone and on retained tissue.

Uterine massage. Tradition: rubbing the belly after birth is widespread. **Record:** a Cochrane review found two trials (Hofmeyr 2013). In one, 200 women all given oxytocin, massage after the placenta reduced blood loss by 41.6 mL at 30 minutes and 77.4 mL at 60 minutes, and reduced the need for extra uterotonics (RR 0.20). In the other, 1,964 women in Egypt and South Africa, massage added nothing to oxytocin. The reviewers called the evidence inconclusive. In a related trial, massage alone was less effective than oxytocin alone, with more women losing 300 mL or more (RR 1.7 to 2.24) (Abdel-Aleem 2010). **Inference:** massage is a weak preventive and a poor substitute for a drug. As treatment for a soft, bleeding womb it is in every manual and in the E-MOTIVE bundle (Gallos 2023) because it is free and expresses clots. No trial tests it where there is no drug. **Technique:** rub the top of the womb firmly through the belly until it is hard like a fist, then keep checking (Hesperian, Where There Is No Doctor, via summary, and A Book for Midwives, ch. 14).

Breastfeeding and nipple stimulation. Tradition: the baby at the breast is said to help the womb contract (Hesperian, A Book for Midwives, ch. 14). **Record:** a Cochrane review of 4 trials and 4,608 women found no clear effect. Suckling against nothing, in 4,227 women, gave a PPH risk ratio of 0.95 (0.77 to 1.16). One maternal death, from retained placenta, occurred in the suckling arm (Abedi 2016). **Inference:** thin evidence. It stays in the protocol because it is right for the baby, but must delay nothing.

Emptying the bladder. Hesperian teaches that a full bladder can cause bleeding. The woman should pass urine within 2 to 3 hours of birth, and if she cannot after 4 hours the bladder must be checked (Hesperian, A Book for Midwives, ch. 14). No trial was found. **Grade D,** but cheap. A bladder she cannot empty needs a catheter, a dispensary skill.

1.4 Hands: the third stage, cord traction and the retained placenta

Active management. Classically a uterotonic drug, early cord clamping and controlled cord traction. A Cochrane review of 8 trials and 8,892 women found it reduced severe PPH (RR 0.34, 0.14 to 0.87), with very low certainty, at the cost of raised blood pressure, more after-pains and more women returning to hospital with bleeding (Begley 2019). Almost all the benefit is the drug.

Controlled cord traction is dispensable. In a WHO trial of 24,390 women, all given oxytocin 10 IU, omitting controlled cord traction raised the risk of losing 1,000 mL or more only slightly, a risk ratio of 1.09 (0.91 to 1.31). That just missed the trial's non-inferiority margin of 1.3. The one uterine inversion in the trial was in the traction arm. The authors concluded that programmes can focus on oxytocin rather than on training in cord traction (Gülmezoglu 2012). For a lay attendant: do not pull on the cord.

How long to wait. In 12,979 consecutive vaginal deliveries the median third stage lasted 6 minutes. PPH became more frequent after 30 minutes and plateaued at 75 minutes (Combs and Laros 1991). A later study found the odds of PPH were 2.1 at 10 minutes, 4.3 at 20 and 6.2 at 30, with 18 minutes the best cut-off (Magann 2005). The two sources differ on the threshold. Practically, a placenta not out by 30 minutes is a danger.

Retained placenta. It complicates about 0.1% of births in less developed countries and about 3% in developed ones, with up to 10% case fatality in the former (Weeks 2008). A Cochrane review gives 1% to 6% (Kumar 2021). Weeks places manual removal at 30 to 60 minutes (Weeks 2008).

Manual removal. Standard hospital practice under anaesthesia. **In outline:** with a clean, gloved hand following the cord, the attendant finds the edge of the placenta and peels it from the wall with the side of the fingers while the

other hand holds the top of the womb through the belly [VERIFY: technique not read in a primary source for this report]. It is very painful without anaesthesia and risks infection and perforation. A placenta that will not separate may be grown into the wall (accreta), and tearing it out piecemeal causes torrential bleeding: stop, compress, transfer. Grade B. A dispensary skill, practised on models.

1.5 Hands: bimanual and aortic compression

Bimanual compression. One hand, a fist, goes into the vagina against the front of the womb. The other hand presses the back of the womb down from above through the belly, squeezing it between the two (Hesperian, Where There Is No Doctor, via summary). WHO 2025 keeps it as a temporising measure, conditional, very low certainty (WHO 2025). **Record:** in a Ghanaian simulator study one provider could not hold full compression beyond about 150 seconds, while two taking turns held it for 5 minutes (Andreatta 2012). **Inference:** it squeezes the open vessels in atony, is exhausting and painful, and is useless for a tear or retained placenta. Grade B, low certainty.

External aortic compression. A fist pressed hard just above the navel pushes the aorta onto the spine. **Record:** in 20 women just after normal birth who were not bleeding, it obliterated leg blood pressure in 55% and reduced it in a further 10%. Loss of the groin (femoral) pulse showed success. It was uncomfortable (Riley and Burgess 1994). In a 2026 Canadian volunteer study, manual compression achieved occlusion in 95% with an 80 kg operator and 85% with a 54 kg operator, but some sessions stopped for pain, and two volunteers fainted (Turcotte 2026). WHO 2025 treats it like bimanual compression (WHO 2025). **Inference:** it buys minutes, needs a heavy operator and is checked by the groin pulse. Grade B (physiology shown, no outcome trial).

1.6 Hands: uterine inversion

The womb turns inside out and comes down through the cervix, often with the placenta still attached. **Frequency:** 40 cases in 125,081 births in Halifax, Nova Scotia, 1977 to 2000, or 1 in 3,737 vaginal births. PPH complicated 65% and transfusion was needed in 47.5%. After active management of the third stage was introduced in 1988, inversion after vaginal birth fell 4.4-fold (Baskett 2002). In the Netherlands it was much rarer, about 1 in 20,000 vaginal births, and associated with manipulation of the third stage (Witteveen 2013). The sources differ more than fivefold, and both link it to handling of the third stage.

Signs: sudden severe pain, shock out of proportion to the visible bleeding, a red mass in the vagina or outside it, and no womb to feel in the belly [VERIFY: standard teaching, signs not read in a primary source for this report]. **Treatment:** immediate replacement, pushing the part that came down last back first, up along the line of the vagina, with the whole hand (the Johnson manoeuvre) [VERIFY: technique described in a 2026 case report seen in summary only]. No contracting drug until the womb is back. Delay makes replacement harder [VERIFY: standard teaching]. Grade B. Prevention: no cord pulling, no pushing on a soft womb.

1.7 Shock by hand: position, warmth and fluids by mouth

The wound report covers these in detail (THRIVING library, WO-01). For the bleeding mother: - Lay her flat. Raising the legs gives a brief benefit lasting minutes (THRIVING library, WO-01, citing the European Resuscitation Council). - Keep her warm, insulated from the ground, dry bedding under her. Cold impairs clotting [VERIFY: not read in a primary source for this report]. - Fluids by mouth: ICRC expert opinion holds oral rehydration probably underused and harmless in a conscious patient (THRIVING library, WO-01). Not if drowsy or vomiting. - E-MOTIVE includes IV fluids (Gallos 2023). The village has none unless salvaged, one reason it loses women the hospital saves.

1.8 Hearth: the condom-catheter tamponade

What it is. A condom tied over a urinary catheter, put into the womb and filled with saline until it presses on the bleeding wall. **Record:** at Dhaka Medical College, July 2001 to December 2002, 23 of 152 women with massive PPH unresponsive to drugs were treated this way. The condom was filled with 250 to 500 mL of saline and left for 24 to 48 hours with antibiotic cover, then deflated gradually. Bleeding stopped within 15 minutes in all 23, and none developed infection (Akhter 2003). A review of low-resource studies found success in 234 of 241 women, with no randomised trials (Tindell 2013). A review of 91 studies and 4,729 women found 85.9% success, 87.1% for atony and 66.7% for accreta, and no clear effect on death or surgery in the randomised trials (RR 0.59, 0.02 to 16.69) (Suarez 2020).

The trials went the other way. In a randomised trial in Benin and Mali of women whose bleeding continued after misoprostol, surgery or death occurred in 16% (9 of 57) with tamponade against 7% (4 of 59) without, RR 2.33, a difference the trial was too small to confirm. Blood loss over 1,000 mL was more frequent (RR 1.52), and 6 women died in the tamponade arm against 1 in the control arm (p = 0.059) (Dumont 2017, Anger 2019). In a stepped-wedge trial in 18 hospitals in Uganda, Egypt and Senegal, introducing the condom-catheter device was followed by more surgery or death, 11.6 against 6.7 per 10,000 births, an adjusted rate ratio of 4.08 (1.07 to 15.58). Only 55 of 1,037 women with PPH received it (Anger 2019). A follow-up found no rise in infection but more severe pain (37% against 19.9%) (Anger 2021).

Why? Probably delay: staff placed the balloon and waited when the woman needed surgery or blood [VERIFY: interpretation, read in summary]. In 2021 the WHO restricted it to settings with surgery and blood, after first-line treatment, with retained tissue and tears excluded and trained staff (WHO 2021).

After the Fall. The trials found no benefit where escalation existed. The village has none, so their comparison does not apply, and a device that stops most atonic bleeding in case series may be the last option. My inference: it belongs at the dispensary as a last resort for atony after drugs and compression, never a reason to delay transfer [VERIFY]. The Anger kit was a Foley catheter of at least size 22, two to three condoms, two cotton strings, a 60 mL syringe and a catheter plug (Anger 2019). The salvage list should include these. The volumes come from one primary source (Akhter 2003) and a second was not read [VERIFY].

1.9 Hearth: the non-pneumatic anti-shock garment (NASG)

What it is. A neoprene suit of nine segments that wraps the legs, pelvis and belly, with a foam ball over the womb, closed tight with Velcro. It shifts blood to the heart and brain and slows pelvic bleeding (Miller 2013). **Record:** a cluster randomised trial in 38 clinics in Zambia and Zimbabwe enrolled 880 women, far short of the 2,400 planned. Mortality fell (odds ratio 0.54) but not significantly (0.14 to 2.05), and recovery from shock was faster (hazard ratio 1.25). Earlier quasi-experimental studies had found a large reduction in extreme adverse outcomes (RR 0.32). Breathlessness was slightly more common (8.7% against 5.5%, not significant) (Miller 2013).

Removal. In the trial the garment was removed only when bleeding was under 50 mL an hour and the pulse under 100 for two hours. It came off segment by segment from the ankles up, with 15 minutes between segments (Miller 2013). Only this one source for the criteria was read [VERIFY].

After the Fall. The NASG is for transport to a district. It does not stop the bleeding at its source. A garment improvised from strips of cloth wound tightly from the ankles up is plausible but untested [VERIFY: my inference]. Grade A-low (one underpowered trial) plus B (quasi-experimental).

1.10 Garden: ergot (Claviceps purpurea)

Identification. Ergot is the sclerotium of the fungus Claviceps purpurea: a hard, dark purple to black, spur-shaped body that replaces the grain in the ear of rye and other grasses. Part used: the sclerotium. Other Claviceps species

carry different alkaloids [VERIFY: not read in a primary source for this report].

Tradition. Lonicer described its use by German midwives to hasten labour in 1565 (Frankfurt), and later writers record it from France in the 18th century (Lloyd, via Henriette's Herbal). Van Dongen dates its use to hasten labour from 1582. Wrong dosing ruptured wombs and killed babies, so that the "pulvis ad partum" (powder for birth) became the "pulvis ad mortem" (powder for death) (van Dongen 1995).

Record. John Stearns of Waterford, New York, published his "Account of the pulvis parturiens" in the Medical Repository in 1808 (historyofmedicine.com, Garrison-Morton entry). Lloyd gives 1807 [VERIFY: date conflict between sources]. Oliver Prescott's 1813 dissertation gives the practice. A decoction of half a drachm of powdered ergot in 4 ounces of water was given a third at a time, with more after 20 minutes. Action began in 7 to 20 minutes. It was never to be given before the cervix had dilated. Prescott lost 4 children in 22 first labours and 1 in 35 later labours in which he used it (Prescott 1813). After about 1828 obstetricians restricted ergot to bleeding after birth, because it killed babies when used to speed labour (van Dongen 1995). A warning attributed to David Hosack about stillbirths could not be found.

Moir and ergometrine. John Chassar Moir (born Montrose, 1900), at University College Hospital, London, recorded postpartum contractions from 1932 with a water-filled balloon and manometer. The purified alkaloids then sold, ergotoxine and ergotamine, acted slowly, while the crude liquid extract acted within minutes (Embryo Project Encyclopedia). With the chemist Harold Dudley he isolated the active water-soluble principle and named it ergometrine (ergonovine in America) in 1935 (Dudley and Moir 1935). Martin and Dumoulin reported routine intravenous ergometrine at birth, with PPH said to fall from 13% to 1% (Martin and Dumoulin 1953) [VERIFY: figure from secondary sources]. Maternal mortality in Britain and America did not fall until the late 1930s (Loudon 1992), and De Costa argues ergometrine played a part (De Costa 2002).

Modern evidence for ergot alkaloids. A Cochrane review of eight trials found that preventive ergot alkaloids (ergometrine, methylergometrine) roughly halved PPH of 500 mL or more (RR 0.52) and reduced mean blood loss by about 80 mL, but raised blood pressure (RR 2.60) and pain (RR 2.53). Oral ergometrine in one study of 289 women showed no benefit (Liabsuetrakul 2018).

What raw ergot delivers. In Slovenian grasses, total alkaloids in sclerotia ranged from 59 to 4,200 mg per kg, a 70-fold range, depending on the genetic group of the fungus and the host grass (Likar 2018). Ergometrine is only a minor part of that total, and the rest are the vasoconstricting peptide alkaloids that cause ergotism [VERIFY: proportion not read in a primary source]. My inference: Prescott's half drachm (about 1.9 g) given in thirds delivers, per dose, anywhere from about 0.04 mg to nearly 3 mg of mixed alkaloids [VERIFY: arithmetic from Likar 2018 and the apothecaries' drachm], with an unknown ergometrine fraction.

What ergot does wrong. - **Ergotism.** Eating contaminated grain causes gangrenous ergotism (limbs that burn, blacken and fall off) and convulsive ergotism. The last large outbreak was in Wollo, Ethiopia, in 1977 to 1978, from ergot-infected wild oats in barley after drought (King 1979, Demeke 1979). Case and death counts differ between secondary sources [VERIFY]. - **Single doses.** Limb ischaemia has been reported with oral methylergometrine given as medicine (Fournie 1987). Ergot alkaloids raise blood pressure (Liabsuetrakul 2018). In a woman with pre-eclampsia that can cause a stroke or fits [VERIFY: contraindication standard, not read in a primary source for this report]. - **Before the birth.** It ruptures the womb and kills the baby (van Dongen 1995, Prescott 1813). - **Instability.** Of 100 field samples of ergometrine injection in tropical countries, only 32 were within 90% to 110% of the labelled content and 34 had less than 60%. Up to 20% of potency is lost per month without refrigeration and in light. A discoloured solution has lost at least 10% (Hogerzeil and Walker 1996). In a 1992 shipment study, ergometrine lost the most of any drug tested (Hogerzeil 1992, THRIVING library, FO-11).

Verdict. Its record against PPH is real (B). As a village medicine it cannot be dosed and it poisons (X). Standardising it is industrial chemistry, outside this book. A salvaged, cold-kept, clear ampoule of ergometrine is a second-line drug, never for a woman with high blood pressure.

1.11 Garden: shepherd's purse and yarrow

Shepherd's purse, Capsella bursa-pastoris, flowering aerial parts. A small cabbage-family annual with a rosette of lobed leaves, tiny white four-petalled flowers and flat triangular or heart-shaped seed pods. Lookalikes are field pennycress, Thlaspi arvense, with rounder, winged pods, and the pepperweeds, Lepidium species. None is known to be dangerous (THRIVING library, WO-01). - **Tradition.** A European bleeding herb, rated by herbalists equal to ergot and goldenseal, and said to have replaced ergot when it ran short in the First World War (Kruidwis, secondary). Wichtl calls that use obsolete (via Kruidwis). Britain was again short of ergot in 1940 (Nature 1940). - **Record.** In 1968, Kuroda and Takagi reported that an extract contracted the isolated rat uterus (Kuroda and Takagi 1968, search summary only). In Kerman, Iran, 100 women given 10 drops of extract under the tongue with an oxytocin drip bled less than women given oxytocin alone (single-blind) (Ghalandari 2017). No trial has tested it alone or against a uterotonic. The European Medicines Agency accepts only traditional use for heavy menstrual bleeding with regular cycles, 1 to 5 g of dried herb as tea 2 to 4 times a day, not in pregnancy or under 18 (EMA 2011). The two sources differ in dose and form, and neither gives a dose for bleeding after birth. - **Inference.** Something in it may act on the womb, but the only human trial used it on top of oxytocin. Herbals that grade it like ergometrine are wrong. **Grade D for PPH.** WO-01 grades it B in a narrow sense for heavy periods, and I agree. A tea after the placenta is out does no harm if nothing else waits for it. Never before birth.

Yarrow, Achillea millefolium, flowering aerial parts. Feathery, finely divided leaves and flat heads of small white or pink flowers. Dangerous lookalikes are the hemlocks, Conium maculatum and Cicuta species, which kill (THRIVING library, WO-01). - **Tradition.** A wound and bleeding herb from Achilles onwards, across Europe, Asia and North America (THRIVING library, WO-01). - **Record.** No study of yarrow for bleeding after birth was found. In rats it reduced bleeding from liver cuts (Bagheri 2024). In a 2026 test-tube study it had no effect on clotting times (Mohamadi 2026). The EMA accepts it for small superficial wounds and advises against use in pregnancy (EMA 2020). - **Inference. Grade D for PPH.** No place in the protocol, and the hemlock risk outweighs any benefit.

1.12 Salvage: oxytocin

Oxytocin is the first-line drug for preventing and treating PPH. In the WHO cord-traction trial every woman received 10 IU (Gülmezoglu 2012), and Hesperian gives 10 IU into the muscle for bleeding (Hesperian, Where There Is No Doctor, via summary). These are two independent sources for the dose.

Heat. Oxytocin is a peptide and breaks down with heat. A systematic review found a median of 45.6% of oxytocin samples in low- and middle-income countries failed assay, 57.5% in Africa. Ampoules showed no loss at 4 to 8°C over 12 months, 3% to 7% loss at 21 to 25°C, and 9% to 19% at 30°C (Torloni 2016, as summarised in THRIVING library, FO-11). WHO, UNICEF and UNFPA say oxytocin must be kept at 2 to 8°C throughout the supply chain (WHO, UNICEF and UNFPA 2019). Products labelled for storage below 25°C are no more stable than the others and should also be refrigerated in hot settings (Nguyen 2019). Hogerzeil found oxytocin more stable than ergometrine, though both degraded in the tropics (Hogerzeil and Walker 1996). Heat-stable carbetocin was as good as oxytocin in the CHAMPION trial (Widmer 2018, THRIVING library, FO-11) but will not be on a village shelf.

After the Fall. In a temperate cellar oxytocin may keep useful potency for a season or two, in a tropical hut not [VERIFY: inference from Torloni's rates]. No one can assay it. FO-11 concluded misoprostol is the shelf item, and this report agrees.

1.13 Salvage: misoprostol

Misoprostol is a cheap prostaglandin tablet, stable when sealed, needing no needle or fridge.

Prevention. In Belgaum, India, 25 auxiliary nurse midwives gave 1,620 women either 600 μg of oral misoprostol or placebo after birth. PPH fell from 12.0% to 6.4% and severe PPH from 1.2% to 0.2% (Derman 2006). By my arithmetic, about 18 women must be treated to prevent one PPH and about 100 to prevent one severe PPH, which

agrees with the figure of about 18 in the library (THRIVING library, FO-11). In 26 Gambian villages, 52 trained traditional birth attendants gave 1,229 women either 600 µg of misoprostol or 2 mg of oral ergometrine (four 0.5 mg tablets). A haemoglobin fall of 2 g/dL or more occurred in 16.4% against 21.2% (RR 0.77, 0.60 to 0.98). Shivering was more common with misoprostol, vomiting with ergometrine (Walraven 2005). Two independent trials thus support 600 µg.

A Cochrane review of 72 trials and 52,678 women found oral misoprostol weaker than injectables (severe PPH RR 1.33) but better than placebo for transfusion (RR 0.31) (Tunçalp 2012). A WHO review of 46 trials found 400 µg as effective as 600 µg, with more fever at the higher doses (RR 2.53). Eight of eleven maternal deaths occurred in women given 600 µg or more, which was not statistically significant (Peto OR 2.49, 0.76 to 8.13) (Hofmeyr 2009). The 2025 WHO guidance supports community use of 400 or 600 µg orally where no skilled attendant is present (WHO 2025).

Treatment. In 978 women with PPH who had not received oxytocin, 800 µg sublingual stopped active bleeding within 20 minutes in 90%, against 96% with 40 IU intravenous oxytocin (Winikoff 2010). In women who had received oxytocin as prevention, the figures were 89% and 90% (Blum 2010). Hesperian also gives 800 µg under the tongue (Hesperian, Where There Is No Doctor, via summary). The two trials share a research group.

Harms. Fever and shivering are common. A woman given 800 µg rectally reached 41.5°C with a pulse in the 170s and confusion (Kaiser 2016). Given before the birth it can rupture the womb [VERIFY: not read in a primary source for this report].

Stability. Misoprostol is stable only in an intact aluminium-aluminium blister. At 40°C and 75% humidity for 6 months most batches stayed in specification, but a damaged blister fell to 48.2%. Plastic-aluminium blisters failed after a year or more, and loose tablets lose about 10% in a week. In Malawi, 5 of 30 samples held only 12.7% to 30.2% of the labelled dose. In Nigeria, 33.7% of 166 samples failed (Hagen 2020).

Distribution in advance. In South Sudan, women given misoprostol in advance took it in 98.9% of home births, with no serious adverse events (Smith 2014).

1.14 Salvage: tranexamic acid

Tranexamic acid (TXA) stops clots dissolving. It does not contract the womb.

WOMAN. In 20,060 women with PPH in 193 hospitals in 21 countries, 1 g of TXA intravenously, given at about 1 mL a minute from a 100 mg/mL ampoule, with a second 1 g if bleeding continued after 30 minutes or restarted within 24 hours, reduced death from bleeding from 1.9% to 1.5% (RR 0.81, p = 0.045). Given within 3 hours of birth, it reduced bleeding deaths from 1.7% to 1.2% (RR 0.69). Given later it did nothing (2.6% against 2.5%). It did not change hysterectomy, all-cause death or clots (thromboembolism 0.3% in each arm) (WOMAN Trial Collaborators 2017). E-MOTIVE gave the same 1 g IV dose as part of the bundle (Gallos 2023). Two sources, not wholly independent.

Prevention fails. In 15,068 anaemic women, TXA given before bleeding started did not reduce PPH (7.0% against 6.6%) (WOMAN-2 Trial Collaborators 2024).

Routes. In women having caesarean births, TXA reached a therapeutic blood level in a median of 2.6 minutes intravenously, 6.4 minutes intramuscularly and about 47 minutes orally (4 g). The investigators judged oral TXA too slow for emergencies and IM a possible alternative (Shakur-Still 2023). The I'M WOMAN trial of IM TXA has not reported (Brenner 2023). The outcome evidence is for IV use only, and IM use is my inference [VERIFY].

Shelf life. Ampoules remained effective after 12 weeks at temperatures from minus 20 to 50°C, but cracked when frozen (de Guzman 2013). Long-term stability beyond expiry was not found [VERIFY].

After the Fall. IV TXA is district work. The effect is modest, about 1 death prevented per 200 women treated early [VERIFY: my arithmetic from 1.7% to 1.2%], and it must never delay hands or a uterotonic.

1.15 The 2025 guideline and the bundle

The WHO, FIGO and ICM consolidated guidance of 5 October 2025 contains 51 recommendations. It adopts the 300 mL plus abnormal sign definition, the calibrated drape, and the E-MOTIVE bundle given together. Misoprostol is a back-up where oxytocin, carbetocin or other injectables are unavailable, and community distribution of 400 or 600 μg is supported in specific contexts. Bimanual and aortic compression are temporising measures (WHO 2025, FIGO 2025). Only the announcements and recommendation summaries were read [VERIFY].

2. Evidence grades

Tool	Tradition says	Record shows	Grade
Measuring blood loss (drape)	Not traditional	Detects more PPH. Alone, no outcome change in 25,000 women	A (detection), A-null (outcome alone)
E-MOTIVE bundle (detect early, treat together)	Not traditional	Severe PPH, surgery or death 4.3% to 1.6%	A
Uterine massage, prevention	Universal	Inconclusive on top of oxytocin, worse than oxytocin alone	A-weak
Uterine massage, treatment of soft womb	Universal	In every bundle, no isolated trial	B
Controlled cord traction	Modern	Dispensable (RR 1.09) and linked to inversion	A (dispensable)
Breastfeeding, nipple stimulation	Universal	RR 0.95, insufficient	D for PPH
Emptying the bladder	Midwifery	No trial	D
Bimanual compression	Obstetric	Simulator and case series, WHO very low certainty	B (low)
Aortic compression	Obstetric	Occlusion in 55% to 95%, no outcome trial	B (low)
Manual removal of placenta	Obstetric	Lifesaving in clinical record	B
Replacing an inverted womb	Obstetric	Case series	B
Flat, warm, oral fluids	Universal	Expert opinion	D (oral fluids), B (warmth)
Condom-catheter tamponade	Modern improvisation	86% to 97% success in series, harm signal in two trials	B (series), A-contested
NASG	Modern	Mortality OR 0.54, not significant	A-low, B
Raw ergot	16th century onwards	Works, kills babies before birth, undosable	B (effect), X (as a village remedy)

Tool	Tradition says	Record shows	Grade
Ergometrine (salvaged)	Since 1935	PPH RR 0.52, blood pressure RR 2.60	A
Oxytocin 10 IU	Since 1950s	First line, fails in heat	A (if potent)
Misoprostol 400 to 600 µg oral, prevention	Since 2000s	PPH 12.0% to 6.4%	A
Misoprostol 800 µg sublingual, treatment	Since 2000s	90% bleeding stopped in 20 minutes	A
TXA 1 g IV within 3 hours	Since 2017	Bleeding death RR 0.69	A
TXA oral in emergency	None	47 minutes to work	X
TXA as prevention	None	No benefit in WOMAN-2	A-null
Shepherd's purse for PPH	European, Persian	One small single-blind trial with oxytocin	D
Yarrow for PPH	Wide	No PPH data	D

3. Means ledger

Tool	Hands	Hearth	Garden and still	Village dispensary	District infirmary	Hospital before the Fall
Recognising PPH	Feel the womb, count the pulse, look at the woman	Marked bowl, cloth weighing	Scale for cloths	Salvaged blood-pressure cuff, shock index, written record	Haemoglobin by lab bench	Calibrated drape, monitors
Massage, breast, bladder	All	All	All	Catheter for retention	Same	Same
No cord traction, wait for placenta	All	All	All	Same	Same	Same
Bimanual, aortic compression	Two trained people	Same	Same	Same	Same	Bridge to theatre
Manual removal	Not without training	Clean hands, boiled water	Ethanol, soap	Trained healer, gloves, antibiotics if stocked	Pain relief, sterile room	Under anaesthesia
Inversion	Replace at once if trained	Same	Same	Same	Same	Under anaesthesia
Shock care	Flat, warm, sips	Oral rehydration solution	Same	Same	IV fluids if salvaged	Transfusion

Tool	Hands	Hearth	Garden and still	Village dispensary	District infirmary	Hospital before the Fall
Tamponade	No	Condom, string, clean water	Boiled saline	Catheter, syringe, antibiotics	Same, with surgery as back-up if a surgeon exists	Commercial balloon
NASG	No	Improvised wraps, untested	Same	Salvaged garment	Same	For transport
Uterotonics	None	None	Raw ergot (not advised)	Misoprostol stock	Oxytocin with cold chain, ergometrine	All
TXA	None	None	None	IM if stocked [VERIFY]	IV within 3 hours	IV
Shepherd's purse	None	Tea	Grown and dried	Same	Same	Not used

What each rung changes. - **Hands** reach every woman: early recognition, no traction, massage, compression. They cannot replace blood. - **The hearth** adds warmth, oral fluids and a condom tamponade. - **The garden and still** add nothing proven against PPH beyond cleaner hands. - **The village dispensary** is where misoprostol roughly halves PPH (Derman 2006), plus manual removal. - **The district infirmary** adds cold-kept oxytocin, IV TXA within 3 hours and IV fluids. - **The hospital before the Fall** adds transfusion and surgery, which save the women with accreta, rupture or clotting failure.

4. Harm test

Uterotonics before the birth. Given before the baby or a second twin, they can rupture the womb and kill both (van Dongen 1995, Prescott 1813). Feel the belly for a second baby first. If in doubt, give nothing until the placenta is out.

Ergot and ergometrine. Raise blood pressure (Liabsuetrakul 2018). Never give with high blood pressure, fits, headache with visual disturbance or a swollen face [VERIFY: contraindications not read in a primary source for this report]. Raw ergot cannot be dosed (Likar 2018). Signs of ergotism: cold, numb, pale or blue fingers and toes, burning pain, confusion, fits. Stop and give no more.

Misoprostol. Fever over 40°C with a racing pulse and confusion can occur at 800 μg (Kaiser 2016). Cool her and give fluids. Damaged or loose tablets may contain little drug (Hagen 2020).

Oxytocin. Degraded ampoules give a false sense of security (Torloni 2016). A large IV bolus can cause a fall in blood pressure [VERIFY: not read in a primary source for this report]. IM is safer for a lay healer.

TXA. Given too fast IV it may drop the blood pressure [VERIFY: not read in a primary source for this report]. The WOMAN trial gave it over about 10 minutes, and after 3 hours it did not help (WOMAN Trial Collaborators 2017).

Massage and compression. Pain and bruising. Pushing hard on a soft womb to expel the placenta risks inversion (Baskett 2002, Witteveen 2013). Aortic compression causes pain and fainting (Turcotte 2026).

Cord traction. Linked to inversion (Gülmezoglu 2012, Witteveen 2013). Do not do it.

Manual removal and tamponade. Infection, perforation, and waiting while the woman bleeds. In two trials the tamponade arm did worse (Dumont 2017, Anger 2019). Failure shows as bleeding past the catheter, a rising pulse or a womb swelling above the balloon [VERIFY: inference]. Then compress and transfer.

NASG. Breathlessness (Miller 2013), and a fall in pressure if removed too quickly [VERIFY: inference].

Plants. Yarrow can be confused with the deadly hemlocks (THRIVING library, WO-01). Shepherd's purse is not to be used in pregnancy (EMA 2011). The greater harm is a family making tea while a woman bleeds out.

Historical harm. Prescott lost 4 of 22 babies in first labours with ergot (Prescott 1813). Ergotism killed people in Wollo in 1977 to 1978 (King 1979, Demeke 1979).

5. Red flags

Each of these means the woman will probably die without transfusion or surgery, which the village cannot give. - Bleeding continues despite massage, misoprostol, compression and a tamponade. - Loss over about 1,500 mL, or the woman becomes confused, drowsy or loses her wrist pulse [VERIFY: threshold my inference from shock classes in WO-01]. - A placenta that will not come away by hand (possible accreta). - Fresh bleeding with a hard womb (a tear needing repair). - Sudden severe pain, collapse, and a womb that cannot be felt or has changed shape (rupture or inversion). - Blood that does not clot, oozing from needle sites or gums (clotting failure) [VERIFY: standard teaching, not read in a primary source for this report]. - Fits or a severe headache after birth (eclampsia, a separate emergency).

What to do anyway. Keep compressing in turns. Keep her flat and warm. Give fluids by mouth while she can swallow. Send for the district if it can be reached, with the NASG or wraps on for the journey. Record times. If she is dying, stop painful interventions, keep her warm, let her hold her baby and her family be with her, and tell the truth gently. Honest comfort is part of the protocol.

6. The case against

Against community misoprostol. Chu, Brhlikova and Pollock reviewed the WHO guidance in 2012 and concluded that the evidence did not support community distribution. They found six trials, all at 600 μg, and argued that the reductions in severe PPH and death were not established (Chu 2012). Oral misoprostol is weaker than injectables (Tunçalp 2012). For a village without potent injectables it still beats placebo. The critics' point stands wherever oxytocin is available.

Against the tamponade. Dumont and colleagues, and Anger and colleagues, found more surgery or death after the device was introduced (Dumont 2017, Anger 2019). The WHO restricted its recommendation (WHO 2021). The case series that suggest 86% to 97% success have no controls (Tindell 2013, Suarez 2020).

Against the drape. Measurement alone changed no outcome in a European cluster trial (Diaz 2018). The benefit came from the bundle.

Against massage and nipple stimulation. The Cochrane reviewers found no clear benefit beyond oxytocin and insufficient evidence for suckling (Hofmeyr 2013, Abedi 2016). The hands-only tools are weakest where the village needs them most.

Against TXA. The effect on bleeding death was just significant ($p = 0.045$), all-cause death did not change, and prevention failed (WOMAN Trial Collaborators 2017, WOMAN-2 Trial Collaborators 2024).

Against the romance of the hospital. Maternal mortality did not fall until the late 1930s (Loudon 1992), and many tools that work are cheap.

Against the romance of home birth. Kaunitz found a maternal death rate about 100 times the state's in a group avoiding obstetric care (Kaunitz 1984). Home-birth advocacy that underplays haemorrhage is contradicted by every

figure here.

Against the herbal. No plant has shown uterotonic action in a human trial without a drug alongside (Ghalandari 2017). The herbal tradition's claim that shepherd's purse equals ergot is not supported (Kruidwis, citing Wichtl).

7. 10-line summary

1. Haemorrhage causes about a quarter of maternal deaths, and death comes within hours (Say 2014, WOMAN Trial Collaborators 2017).
2. From 2025 the trigger is 300 mL with an abnormal sign, or 500 mL (WHO 2025).
3. The eye misjudges blood loss in both directions. Measure, and act on the woman's signs.
4. Detecting early and doing everything at once cut severe outcomes by 60% (Gallos 2023).
5. Do not pull the cord. It is dispensable and causes inversion (Gülmezoglu 2012).
6. Massage and compression buy time but do not replace a drug.
7. Misoprostol 600 µg by mouth after the birth roughly halves PPH and is the village shelf drug (Derman 2006, Walraven 2005, THRIVING library, FO-11).
8. Oxytocin works only if kept cold. Assume a warm-kept ampoule is weak (Torloni 2016).
9. TXA 1 g IV helps only within 3 hours, and oral TXA is too slow (WOMAN Trial Collaborators 2017, Shakur-Still 2023).
10. Raw ergot works but cannot be dosed. Shepherd's purse and yarrow are not uterotonics.

8. Open questions

- What is the untreated case fatality of severe PPH? No figure was found.
- Does IM TXA work as well as IV? The I'M WOMAN results are pending (Brenner 2023).
- Does the condom-catheter save lives where there is no surgery? The trials were done where surgery existed (Dumont 2017, Anger 2019).
- How long do misoprostol, oxytocin and TXA keep beyond their expiry under village conditions? No long-term data were found.
- Does shepherd's purse contract the human womb on its own? No trial has tested it alone.
- Does massage alone help in the absence of any drug? No trial exists (Hofmeyr 2013).
- How well can a lay attendant learn bimanual compression and manual removal on a model, and keep the skill over years with few cases?

9. Sources to read in full

1. Gallos 2023, NEJM. The E-MOTIVE trial and its bundle.
2. WOMAN Trial Collaborators 2017, Lancet. TXA timing and dose.
3. WHO 2025 consolidated guideline on PPH (full text not read here).
4. Derman 2006, Lancet, and Walraven 2005, BJOG. Misoprostol in villages.
5. Hofmeyr 2009, Bulletin of the WHO. Misoprostol doses and deaths.
6. Anger 2019, BJOG, and Dumont 2017, BMJ Open. The trials against tamponade.
7. Weeks 2008, Best Practice and Research. The retained placenta.
8. Hesperian, A Book for Midwives, chapters 13 to 14. Village practice.
9. Liabsuetrakul 2018, Cochrane. Ergot alkaloids.
10. Hagen 2020, PLoS One. Misoprostol stability and packaging.

At the bedside after the Fall

Household. - *Needs:* two adults drilled in the hands-only steps, a plastic sheet, a bowl marked at 300 and 500 mL, boiled water, a blanket, oral rehydration solution, a clock, paper. Misoprostol in sealed blisters if the village can supply

it. - *Minimum:* no cord pulling, baby to the breast, feel the womb every 5 to 10 minutes for an hour, massage if soft, empty the bladder, give misoprostol after the birth if available, compress and send for help if bleeding continues. - *First failure to expect:* nobody watching the mother because everyone is looking at the baby.

Village of 300. - *Needs:* a trained lay healer and a deputy, misoprostol in alu/alu blisters (about 10 births a year plus reserve), a blood-pressure cuff, gloves, catheters, condoms, string, a 60 mL syringe, soap, ethanol, a birth record, and a model for practising compression and manual removal. - *Minimum:* misoprostol 600 µg at every birth once the baby is out, the hands-only protocol, compression in turns, manual removal, the condom-catheter as last resort, and transfer arranged in advance. - *First failure to expect:* a healer who has not seen a PPH for two years hesitates, or loose misoprostol has degraded.

District of 3,000. - *Needs:* a nurse or doctor, a sterile room, a cold store for oxytocin, TXA, IV cannulas and fluids, an NASG, a haemoglobin test, village records, and ideally someone who can repair tears and transfuse matched blood. - *Minimum:* the full E-MOTIVE bundle: measure, massage, oxytocin, TXA within 3 hours, fluids, examine for tears and retained tissue, and escalate to whatever surgery exists. - *First failure to expect:* warm-kept oxytocin used as if potent, or a woman arriving after the 3-hour TXA window.

Protocols

Protocol 1. Preventing bleeding at every birth

1. Note the time of birth.
2. Feel the belly. Make sure there is no second baby. If you are not sure, give no drug.
3. If available, give misoprostol 600 µg (three 200 µg tablets) by mouth right after the birth, or 400 µg if that is the stock (Derman 2006, Walraven 2005, Hofmeyr 2009). If oxytocin kept cold is available and a trained person is present, give 10 IU into the thigh muscle instead (Gülmezoglu 2012).
4. Put the baby to the breast.
5. Do not pull the cord. Wait for the placenta with the mother upright or squatting.
6. When the placenta comes, check it is complete. Keep it to show the healer.
7. Feel the womb every 5 to 10 minutes for the first hour, then every 15 to 30 minutes for 1 to 2 hours (Hesperian, A Book for Midwives, ch. 14). It should be hard like a fist below the navel.
8. If soft, rub firmly until hard.
9. Help her pass urine within 2 to 3 hours.
10. Record: time of birth, drug and time, time of placenta, estimated blood loss, pulse.

Protocol 2. Bleeding starts: the first ten minutes (anyone)

1. Shout for help. Note the time. One person stays with the mother at all times.
2. Rub the womb firmly until hard. Squeeze out clots.
3. Count the pulse for 15 seconds, times 4. Over 100 means PPH even at 300 mL (WHO 2025).
4. Give misoprostol 800 µg under the tongue if no misoprostol has been given (Winikoff 2010, Blum 2010). If 600 µg has already been given, a second dose adds fever with uncertain benefit [VERIFY]. Or oxytocin 10 IU IM if kept cold.
5. Empty the bladder.
6. Lay her flat, legs raised, keep her warm.
7. If the placenta is still in and bleeding is heavy, go to Protocol 4.
8. If bleeding continues, start bimanual compression (Protocol 3).

Protocol 3. Compression (two trained people)

1. Bimanual: clean hand, fist in the vagina against the front of the womb, other hand behind the womb on the belly, squeeze hard between both.
2. Swap every 2 minutes. One person cannot hold it beyond about 2.5 minutes (Andreatta 2012).
3. Hold until the womb stays hard and bleeding stops, then release slowly and keep checking.
4. If bleeding continues, or as a bridge: aortic compression. Fist above the navel, press straight down onto the spine with the body weight. Check for loss of the groin pulse (Riley and Burgess 1994). Heavy operator if possible (Turcotte 2026).
5. Record times of each step.

Protocol 4. Placenta not out

1. No traction. Encourage her to push, empty the bladder, put the baby to the breast.
2. At 30 minutes, if no bleeding: wait under watch, rubbing the womb (Combs and Laros 1991).
3. At 30 to 60 minutes (Weeks 2008), or at once if bleeding heavily: manual removal by a trained healer with a clean gloved hand.
4. If it will not separate: stop. Compress, keep her warm, send to the district.
5. Antibiotics after manual removal if stocked [VERIFY: regimen not read for this report].

Protocol 5. Uterine inversion

1. Signs: sudden pain, collapse, a red mass in or outside the vagina, no womb in the belly.
2. Replace at once with the flat of the hand, last part out goes back first.
3. Give no uterotonic until the womb is back. Then give one and massage.
4. Treat shock. Transfer.

Protocol 6. Condom-catheter tamponade (dispensary)

1. Only after drugs and compression have failed and the placenta is out and complete, and if transfer is not possible in time.
2. Tie a condom over the catheter with string.
3. Insert into the womb. Fill with 250 to 500 mL of clean, boiled, cooled salt water until bleeding stops (Akhter 2003).
4. Plug the catheter. Leave 24 to 48 hours. Give antibiotics if stocked (Akhter 2003).
5. Watch pulse and bleeding every 15 minutes. If bleeding continues, the device is failing: compress and transfer.
6. Remove by letting out the water slowly.

Protocol 7. District: the bundle

1. Measure blood loss. Trigger at 300 mL with abnormal sign or 500 mL (WHO 2025).
2. Massage, oxytocin (10 IU IM or IV if potent), TXA 1 g IV over 10 minutes within 3 hours, repeat after 30 minutes if bleeding continues (WOMAN Trial Collaborators 2017, Gallos 2023).
3. IV fluids if available. Examine for tears and retained tissue. Repair tears.
4. Escalate: tamponade, NASG, surgery or transfusion if anyone can.
5. NASG removal: bleeding under 50 mL an hour and pulse under 100 for 2 hours, segment by segment from the ankles, 15 minutes apart (Miller 2013).

Protocol 8. When nothing more can be done

1. No wrist pulse, unconsciousness, bleeding continuing despite all steps, more than 3 hours since onset with no transfer possible [VERIFY: my inference].
2. Stop painful interventions.
3. Keep her warm, give sips if she can swallow, let her hold her baby, bring her family.
4. Record everything, including the times, for the healer's learning.

Numbers to carry

1. 500 mL, about 2 cups, is PPH. 300 mL with a pulse over 100 is PPH too (WHO 2025).
2. Check the womb every 5 to 10 minutes for the first hour (Hesperian, A Book for Midwives, ch. 14).
3. Misoprostol 600 µg by mouth to prevent, 800 µg under the tongue to treat (Derman 2006, Winikoff 2010).
4. Oxytocin 10 IU into the muscle, if kept at 2 to 8°C (Gülmezoglu 2012, WHO, UNICEF and UNFPA 2019).
5. TXA 1 g IV within 3 hours, again after 30 minutes if needed (WOMAN Trial Collaborators 2017).
6. Placenta: worry at 30 minutes, act by 60 (Combs and Laros 1991, Weeks 2008).
7. One person can hold bimanual compression for about 2.5 minutes. Swap (Andreatta 2012).
8. Tamponade: 250 to 500 mL, 24 to 48 hours (Akhter 2003).
9. Severe PPH occurs in about 2 in 100 births (Carroli 2008).

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