MA-09 Miscarriage, unsafe abortion and post-abortion care: what the record shows and what saves lives

HEALING after the FALL, research library, MA-09

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

Findings by section

1. Scope, stance and how to read this report

This report covers the record of deaths when pregnancies are ended without safe care, miscarriage, which no stance avoids, and the plants and household methods women have used, as history, evidence and harm. Whether the book teaches a way to end a pregnancy is the owner's decision [OWNER]. This report gives no procedure for ending a pregnancy, by instrument or by plant. It gives the full care a woman needs after any loss, spontaneous, induced or unknown, because that care is the same and the healer often cannot tell which it was. It builds on the library reports on prevention, bleeding after birth, the fevers of pregnancy, sepsis, poisonous remedies and salvaged drugs (THRIVING library, MA-08, MA-02, MA-04, IN-04, TR-15, ME-09).

In the medical literature "abortion" includes spontaneous loss, so "incomplete abortion" means retained tissue after any early loss, and post-abortion care (PAC) treats it. "Uterine size" is the size of the womb on examination, in weeks, and Ipas doses by it, not by dates (Ipas 2025).

2. The global record of deaths

The numbers. The death figure the brief attributes to Sedgh 2012 belongs to a companion paper. Sedgh and colleagues estimated abortion rates of 35 per 1,000 women aged 15 to 44 in 1995 and 28 in 2008, with the unsafe share rising from 44 to 49 per cent, and found that restrictive laws were not associated with lower rates (Sedgh 2012, abstract). The death estimate comes from Åhman and Shah: about 47,000 deaths from unsafe abortion in 2008, down from about 69,000 in 1990, with the deaths per 100,000 live births falling from 50 to 30. Unsafe abortion caused about 1 in 8 maternal deaths worldwide, and about 1 in 5 in Eastern Africa (Åhman and Shah 2011, abstract). The same authors put unsafe abortions at about 21.6 million in 2008, 14 per 1,000 women (Shah and Åhman 2010, abstract). The brief's "13 per cent of maternal deaths" fits the 1 in 8.

A later WHO analysis using a different method attributed 7.9 per cent of maternal deaths in 2003 to 2009 to abortion, with an uncertainty range from 4.7 to 13.2 per cent (Say 2014, abstract). Ganatra and colleagues estimated 55.7 million abortions a year in 2010 to 2014, 45.1 per cent unsafe, of which 8.0 million were "least safe", almost all in developing countries (Ganatra 2017, abstract). Our World in Data, summarising these sources, gives deaths of about 450 to 500 per 100,000 unsafe abortions in the worst regions, against fewer than 1 per 100,000 safe procedures (Our World in Data, secondary) [VERIFY].

What the numbers mean for the book. Deaths come from bleeding, infection and injury to the womb or bowel,

and the method, not the intention, decides the risk. The killers after the Fall will be those of the "least safe" category: untrained instruments, toxic substances and no care afterwards.

3. Before and after antibiotics: the United States, England and Glasgow

The United States. Official counts put deaths from abortion at almost 2,700 in 1930, 18 per cent of maternal deaths that year. They fell to just under 1,700 in 1940, just over 300 in 1950 and just under 200 in 1965, when abortion still caused 17 per cent of pregnancy-related deaths. In 1972, the year before the Supreme Court decision, 39 women died from illegal abortion. Gold attributes the fall "most likely" to antibiotics in the 1940s and to better care, not to any change of law (Gold 2003). The burden fell on hospitals. Harlem Hospital admitted about 1,600 women for incomplete abortion in 1962, one for every 42 deliveries, and Los Angeles County hospital treated 701 septic abortions in 1968, one for every 14 deliveries. Non-white women died at about 12 times the rate of white women in 1972 to 1974 (Gold 2003).

The figures are contested. Estimates attributed to Taussig around 1936 and Tietze around 1940 ran to 5,000 to 10,000 deaths a year, against 1,682 officially reported in 1940, and Bernard Nathanson, a NARAL founder who later opposed abortion, said the movement had inflated the 10,000 figure (Straight Dope, secondary). The true 1940 count probably lay between the two, and deaths fell by more than 90 per cent by 1965, mostly before any law changed [VERIFY].

England and Wales. The Inter-Departmental Committee on Abortion (the Birkett Committee) estimated in 1939 that there were 110,000 to 150,000 abortions a year, about 40 per cent of them criminal (Nature 1939, search summary only) [VERIFY]. A 1974 letter to The Spectator quotes the committee as reporting 400 to 600 deaths a year attributed to or associated with abortion in the preceding decade (Spectator 1974, secondary) [VERIFY].

Glasgow, 1923 to 1925, before antibiotics. William Napier's MD thesis is the closest this search came to a pre-antibiotic series of septic abortion. He reviewed 500 women admitted with puerperal infection to Belvidere Fever Hospital, Glasgow, between April 1923 and November 1925. Overall, 96 died, 19.2 per cent. Of the 82 women whose infection followed abortion, 20 died, 24.4 per cent, against 16.1 per cent after a normal labour and 23.5 per cent after an abnormal one (Napier 1927, read in full). One in four died, with nursing and skilled doctors but no antibiotics, which is the baseline a village without antibiotics should expect [VERIFY].

Napier's most useful finding for the book is about the curette. He curetted 60 women during fever and saw improvement in none. Some grew worse, with peritonitis or clots in the pelvic veins, and he abandoned active treatment of the womb in fever except to stop bleeding. Bleeding in 29 patients, most of them with an incomplete septic abortion, was controlled with blunt curettage, a douche, massage of the womb and the uterotonic drugs of the day (ergot and pituitary extract). He found curettage safe once the fever had settled (Napier 1927). MA-04 also warns that the soft infected womb perforates (THRIVING library, MA-04). Modern advice to evacuate promptly is discussed in section 10.

4. Romania 1966 to 1989 and Chile after 1989

Romania. In 1966 Decree 770 banned abortion and most contraception. Stephenson and colleagues reported that by 1989 Romania's maternal mortality, about 150 per 100,000 live births, was the highest in Europe (Stephenson 1992, abstract only). Hord and colleagues gave 159 per 100,000 in 1989, with 87 per cent of maternal deaths caused by illegal abortion, falling to 83 in 1990, the first year after the ban was lifted (Hord 1991, abstract). Our World in Data gives a rise of almost 150 per cent between 1965 and 1985 and about 9,500 to 10,000 women dead over the 23 years (Our World in Data, secondary). The brief's "threefold" rise is not confirmed, and the figures read support a doubling to a 2.5-fold rise [VERIFY]. After legalisation the recorded abortion rate roughly doubled and contraceptive use rose slowly (Serbanescu 1995, abstract).

Chile. Chile banned abortion in all circumstances in 1989. Koch and colleagues analysed maternal deaths from 1957 to 2007 and found that maternal mortality fell from 41.3 to 12.7 per 100,000 live births after the ban, a fall of 69.2 per cent, and that the slope of decline did not change at the ban. They credited mainly women's education, skilled birth attendance, clean water and sewers (Koch 2012, abstract). A sudden ban with no contraception and no post-abortion care killed women in large numbers in Romania. A ban with rising education and hospitals that treated complications did not reverse Chile's falling trend [VERIFY]. The common factor is whether injured women are treated.

5. Misoprostol in Latin America: fewer deaths, new harms

In the late 1980s Brazilian women began to use misoprostol, an ulcer drug sold in pharmacies, to end pregnancies. In Rio de Janeiro in 1991, 57 per cent of 803 women admitted with complications had used it, at a median of 800 μg (range 200 to 16,800). Misoprostol users had less infection, injury and transfusion than women who had used catheters (p below 0.0005), and 52 per cent began bleeding within 12 hours (Costa and Vessey 1993, abstract). In Recife, among 1,840 women, infection followed 4.2 per cent of misoprostol abortions, 7.9 per cent of reported spontaneous losses and 49.4 per cent of abortions by other methods (Faúndes 1996, abstract).

In Santo Domingo, Dominican Republic, the share of abortion admissions with serious complications fell from 11.7 per cent in 1986 to 1.7 per cent in 2001, while misoprostol came to be sold without prescription in 64 per cent of pharmacies. The authors were careful: their hospital data were of poor quality and they claimed only a temporal association (Miller 2005, abstract). In Brazil, admissions for abortion complications fell 41 per cent between 1992 and 2009, from about 282,000 to 165,000, and serious complications fell more than less serious ones (69 against 52 per cent) (Singh 2012, abstract). In Uruguay, where abortion caused 29 per cent of maternal deaths nationally and 48 per cent at the main public maternity hospital, Pereira Rossell, doctors began in 2001 to counsel women before and after self-induced abortion without performing it. Among 675 women counselled, none had a serious complication (Briozzo 2006, abstract).

The new harm. When misoprostol fails and the pregnancy continues, the child may be damaged. In Brazil, 42 children with limb defects and other abnormalities had mothers who had taken misoprostol in the first trimester, most often 800 μg (Gonzalez 1998, abstract). In a case-control study, 49 per cent of mothers of children with Möbius syndrome, a paralysis of facial and eye muscles, had used misoprostol, against 3 per cent of controls, an odds ratio of 29.7 (Pastuszak 1998, abstract). After the Fall this matters because a woman with bleeding and a closed cervix may still carry a living pregnancy, which misoprostol may harm without ending. The protocols therefore restrict misoprostol to an open cervix with tissue passing or retained, or to bleeding that threatens life.

6. Miscarriage: how often, and what happens if the healer waits

Frequency. In a study of 221 women trying to conceive in North Carolina, with daily urine tests, 22 per cent of pregnancies ended before they could be detected clinically and 31 per cent of all pregnancies after implantation were lost (Wilcox 1988, abstract). Of pregnancies that a woman knows about, about 15.3 per cent end in miscarriage, about 23 million a year worldwide, and about 10.8 per cent of women have had at least one (Quenby 2021, abstract). Most losses happen in the first 12 weeks.

What waiting does. In London, Luise and colleagues followed 1,096 women with first-trimester miscarriage diagnosed by ultrasound. Of those who chose to wait, 81 per cent (367 of 451) completed without surgery. Success depended on the type: 91 per cent for incomplete miscarriage (201 of 221), 76 per cent for missed miscarriage and 66 per cent for an empty sac. About 70 per cent completed within 14 days, and 84 per cent of incomplete miscarriages did (Luise 2002a, abstract). In a second analysis of incomplete miscarriage, 91 per cent completed, on average after 9 days (range 1 to 32), and 83 per cent by the end of the second week. The odds of completing in a given week fell from 1 to 1 in week 1 and 2 to 1 in week 2, to 1 to 2 in week 3 and 1 to 5 in week 4 (Luise 2002b, abstract). A village has neither Luise's ultrasound nor her clinic, so its warning signs must be sharper.

Is waiting dangerous? In the MIST trial in the United Kingdom, 1,200 women were randomised to waiting, misoprostol or surgery. Infection within 14 days was about 3 per cent after waiting, 2 per cent after medical care and 3 per cent after surgery, with no significant difference. Waiting and medical care led to more unplanned surgical evacuations (Trinder 2006, abstract). Watched waiting is as safe as surgery for infection, but some women will need a second step.

7. Misoprostol for incomplete miscarriage

Trial evidence. The Cochrane review of medical treatment for incomplete miscarriage pooled 24 trials with 5,577 women, none after 13 weeks. Misoprostol was not clearly better than waiting (complete miscarriage RR 1.23, 95% CI 0.72 to 2.10). Against surgery it was slightly less effective (RR 0.96, 0.94 to 0.98), but it avoided surgery in almost every woman (surgical evacuation RR 0.05). Unplanned procedures were five times more common (RR 5.03), and so were nausea (RR 2.50), vomiting (RR 1.97) and diarrhoea (RR 4.82). Five trials compared doses or routes and none was clearly superior (Kim 2017, abstract). The brief's "600 to 800 μg" fits the doses used in the trials, but the abstract did not compare 600 with 800 μg [VERIFY].

Against manual vacuum aspiration (MVA), 600 μg by mouth completed 94.5 per cent against 99.1 per cent in 447 women in Burkina Faso (Dao 2007, abstract). In Kampala, among 317 women all given antibiotics, completion was 96.3 against 91.5 per cent and complications 0.9 against 9.8 per cent (Weeks 2005, abstract). In Madagascar and Moldova, 400 μg under the tongue and 600 μg by mouth worked equally, 94.5 and 94.6 per cent (Diop 2009, abstract), and in five sub-Saharan countries 400 μg under the tongue completed 94.4 per cent against 100 per cent for surgery among 860 women (Shochet 2012, abstract). Two Nigerian trials found 83 and 86.3 per cent against 99 and 100 per cent (Ibiyemi 2019, Ani 2022, abstracts). A village using misoprostol must expect about 1 woman in 10 to need a second step.

Regimens, from more than one source. For a womb under 13 or 14 weeks in size, the dose is a single 600 μg by mouth or a single 400 μg under the tongue. This is given by Blum and colleagues for FIGO (Blum 2007, abstract), by the WHO guideline as recorded in its evidence database (WHO 2022, via BIGG records, not read in full) [VERIFY] and on the Ipas flow chart (Ipas 2022, search summary). The thresholds differ: Ipas uses 12 weeks on its flow chart and 13 weeks in its manual, WHO uses 14 weeks. The village should use the strictest, 12 weeks. Above that size, Ipas gives 400 μg under the tongue, in the cheek, or in the vagina if there is no bleeding, every 3 hours until expulsion, and states that "uterine size, not gestational age" should decide (Ipas 2025). Ipas expects care above 13 weeks to take place in a facility, which after the Fall means the district (Ipas 2013).

For a missed miscarriage, in which the pregnancy has died but nothing has passed, 800 μg in the vagina completed 71 per cent by day 3 and 84 per cent by day 8, with haemorrhage or womb infection in 1 per cent or fewer (Zhang 2005, abstract). Adding mifepristone 200 mg beforehand raised completion from 67.1 to 83.8 per cent (Schreiber 2018, abstract). Both trials used ultrasound to prove the pregnancy had died. Without it, a missed miscarriage cannot be told safely from a living pregnancy with wrong dates, so the village should wait for the cervix to open or for bleeding.

Who may give it. WHO recommends that community health workers, pharmacists and traditional medicine practitioners may treat uncomplicated incomplete abortion under 14 weeks with misoprostol (WHO 2022, via BIGG records) [VERIFY]. Ipas excludes suspected ectopic pregnancy, sepsis or pelvic infection, an unstable pulse and pressure, and known allergy to prostaglandins (Ipas 2022, search summary). Ipas does not recommend antibiotics before misoprostol, only for women with signs of infection (Ipas 2013).

Side effects. Cramping, bleeding, nausea, diarrhoea, shivering and fever. MA-02 records fever above 40 °C after 800 μg under the tongue (THRIVING library, MA-02). Hesperian says that fever in the first 24 hours after misoprostol is usually the drug and fever after 24 hours means infection (Hesperian, Where Women Have No Doctor).

Stock. Misoprostol degrades with moisture. Tablets in an intact aluminium blister keep, loose tablets lose about 10 per cent a week (THRIVING library, MA-02), and salvaged blister stock is probably usable about 5 years past expiry,

doubtful at 10 and worthless at 20 (THRIVING library, ME-09). A district of 3,000 with about 18 recognised miscarriages a year, a third treated with three tablets each, uses about 20 tablets a year [VERIFY]. Stock dies of damp, not of use.

The induced-abortion evidence, for the owner [OWNER]. The owner should know what the record shows, without a regimen. A systematic review of misoprostol alone for first-trimester abortion found that about 22 per cent of women needed a surgical evacuation, 6.8 per cent had an ongoing pregnancy, and 0.7 per cent needed transfusion or admission (Raymond 2019, abstract). Among women who managed their own medication abortion between 9 and 16 weeks, 89.4 per cent completed without a procedure (Moseson 2023, abstract). Any village use to end a pregnancy, sanctioned or not, will therefore produce continuing pregnancies at risk of birth defects, bleeding and retained tissue needing the protocols below. Dating by the last period with examination misclassified only 1.6 per cent of women as under 63 days (Bracken 2011, abstract), but with trained clinicians.

8. Vacuum aspiration against sharp curettage

History. Harvey Karman, a Californian psychologist without a medical licence, described in 1972, with Malcolm Potts, a soft plastic cannula with a syringe as the vacuum source (Karman and Potts 1972, title only), and in the same year published "The paramedic abortionist" (Karman 1972, title only). On 13 and 14 May 1972 in Philadelphia his "super coil" device was used on 15 women in the second trimester. Nine had serious complications, one needed a hysterectomy, and the Centers for Disease Control investigated (Tunc 2008, abstract and secondary). The syringe survived the scandal, and WHO, other UN agencies and FIGO now endorse MVA as an essential technology (Ipas 2013).

Evidence. Against sharp curettage, vacuum aspiration lost less blood (mean 17 mL less), caused less pain (RR 0.74) and took less time (1.2 minutes less), with perforation rare in both (Tunçalp 2010, abstract). Ipas reports 98 to 100 per cent success for incomplete abortion, 3 to 10 minutes per procedure, no need for electricity and use under local anaesthetic, and WHO calls dilatation and sharp curettage "obsolete" (Ipas 2013). In a randomised equivalence trial in South Africa and Vietnam, complications after first-trimester MVA were 1.4 per 100 for mid-level providers against none for doctors in South Africa, and 1.2 against 1.2 in Vietnam, mostly retained tissue and infection found later (Warriner 2006, abstract). Trained nurses and midwives were as safe as doctors.

Harms. Ipas lists incomplete evacuation, perforation, cervical tears, infection, haemorrhage and blood collecting in the womb. Signs of perforation are an instrument passing further than the womb allows, fat or bowel in the aspirate, loss of suction and sudden pain or bleeding, and bowel injury needs open surgery (Ipas 2013). Aspiration beyond 12 weeks and curettage by untrained hands carry the greatest risk.

After the Fall. MVA is a district skill, not written out here. It needs a supervised apprenticeship, cannulae, an aspirator, a way to sterilise them and local anaesthetic. Ipas recommends a single dose of antibiotic before aspiration for post-abortion care, for example doxycycline 200 mg by mouth, or metronidazole 400 mg every 4 hours for 3 doses, while noting the evidence is scant, and says that aspiration should go ahead even when no antibiotic is available (Ipas 2013). The same instrument used to empty a womb after a loss can end a pregnancy, which is why its place in the book turns on the stance [OWNER]. Its place in post-abortion care does not.

9. Ectopic pregnancy: the loss that hides

In an ectopic pregnancy the embryo implants outside the womb, nearly always in a fallopian tube, which bursts as it grows, usually in the first trimester, so that the woman bleeds into her abdomen. No pre-surgical case-fatality figure was found [VERIFY].

How it looks. The UK guideline lists pain, a missed period and vaginal bleeding as common, shoulder-tip pain in about 10 to 20 per cent and dizziness or fainting in about 20 to 30 per cent, with tenderness on pelvic examination in about 91 per cent and on one side in about 82 per cent. Atypical presentation is common (NICE 2019). Only half

of women with an ectopic have risk factors or a suspicious examination. The risk that a pregnancy is ectopic is 10 to 15 per cent after a previous ectopic, and 25 to 50 per cent after tubal surgery or with an IUD in place (Ipas 2013). Untreated gonorrhoea, chlamydia and infected abortions after the Fall will raise the rate [VERIFY].

Why it matters here. An ectopic looks like a threatened miscarriage. The differences are a closed cervix, no tissue passed, pain on one side or in the shoulder, and fainting or a fast pulse out of proportion to the blood seen. Misoprostol does not treat it, and Ipas excludes it from misoprostol care (Ipas 2022, search summary). Tissue passed or removed and found on careful inspection to be pregnancy tissue makes an ectopic unlikely (Ipas 2013).

The record with surgery. In Yaoundé, Cameroon, ectopic pregnancy occurred in 0.79 per cent of births and 3 of 320 women died, 0.94 per cent, in a city with surgeons (Leke 2004, abstract). In the United States, with ultrasound, blood tests and early surgery, 876 women died between 1980 and 2007, 0.50 per 100,000 live births by the end (Creanga 2011, abstract). A district of 3,000 with about 100 births a year will meet about one ectopic a year [VERIFY].

10. Bleeding and sepsis after any pregnancy loss

Bleeding. Heavy bleeding after a loss usually means tissue left in the womb or a womb that will not contract. Hesperian defines dangerous bleeding as soaking more than 2 thick pads an hour for 2 hours in a row, passing large clots, or feeling dizzy or faint. Its first actions are firm rubbing of the lower belly, removal of tissue visible at the cervix by a trained hand, and misoprostol 800 μg under the tongue for 30 minutes (Hesperian, Where Women Have No Doctor). Ipas lists misoprostol 200 to 800 μg, oxytocin by drip and methylergonovine by injection (Ipas 2013), and MA-02 holds the full treatment of haemorrhage (THRIVING library, MA-02). Shock comes from bleeding, sepsis or both, and its signs include a pulse over 100 and breathing over 30 (Hesperian, Where Women Have No Doctor). Protocol 4 gives Ipas's stabilisation.

Sepsis. Infection starts in retained tissue and spreads to the womb, pelvis and blood, with fever above 38 °C, chills, pain, foul discharge and a tender womb. Sepsis is shown by low blood pressure (systolic below 90), a pulse over 100, breathing over 24 and a temperature above 38 or below 36 °C (Ipas 2013). IN-04 gives qSOFA thresholds adjusted for pregnancy and records that source control within about 6 hours matters (THRIVING library, IN-04). Group A streptococcus can kill within 2 days (THRIVING library, MA-04).

Antibiotics, compared across sources. Ipas gives ampicillin 2 g every 6 hours by vein with gentamicin 5 mg/kg once a day and metronidazole 500 mg every 8 hours, until 48 hours without fever, then by mouth to at least 7 days, and for milder womb infection ceftriaxone 250 mg once then doxycycline 100 mg twice a day for 14 days, with or without metronidazole (Ipas 2013). Hesperian gives similar combinations, gentamicin as 80 mg three times a day, a switch to doxycycline and metronidazole by mouth after 48 hours without fever to complete 10 days, and transfer if not better in 24 hours (Hesperian, Where Women Have No Doctor). MA-04 adds oral amoxicillin 1 g with metronidazole 500 mg for the village (THRIVING library, MA-04). The sources agree on the classes and differ on duration (7, 10 or 14 days). A Cochrane review found only 3 small trials with 233 women and could not name a best regimen (Udoh 2016, abstract). The village should use the broadest combination it has and the longest course it can afford, 10 days by mouth after any injected start [VERIFY].

When to empty the womb. Ipas says that a woman with incomplete abortion and infection should have her womb emptied at once by aspiration, with antibiotics started first and without waiting for tests (Ipas 2013). Napier saw no benefit and some harm from the curette during fever before antibiotics (Napier 1927). The two are reconciled by three changes since 1925: antibiotics given first, a soft plastic cannula instead of a metal curette, and a hand trained for the job. After the Fall, where antibiotics are present but no trained aspirator is, the woman should receive antibiotics and be carried to the district infirmary. Misoprostol is excluded by Ipas in sepsis because it is slow (Ipas 2022, search summary). Where no evacuation is possible within a day, giving misoprostol with antibiotics is the inference of this report and not a published recommendation [VERIFY].

Tetanus. Tetanus follows abortions with dirty instruments, and kills (Akhter 1995, title only, Ilikannu 2026, abstract). Ipas and Hesperian both give tetanus vaccine in post-abortion care, with antiserum for the unvaccinated (Ipas 2013, Hesperian, Where Women Have No Doctor).

Injury inside. A hard, silent, tender belly, shoulder pain, fever and shock after an instrument suggests a hole in the womb or bowel. Hesperian gives nothing by mouth unless the journey takes more than 12 hours, and nothing into the vagina (Hesperian, Where Women Have No Doctor). She needs an operation the village cannot give.

11. The plants and the household methods

Every plant here was used in a living tradition to "bring down the courses", to restore a late period that might or might not have been a pregnancy. Each is given as the tradition understood it, then the record, then the pharmacology. No preparation for ending a pregnancy is given (THRIVING library, MA-08, TR-15).

The frame: Riddle and his critics. In the tradition, a late period was a blockage of the menses, and an emmenagogue cleared it. The historian John Riddle argued that women from antiquity onward held real knowledge of plants that prevented or ended early pregnancy, lost as medicine passed to men and the Church (Riddle 1997, not read). Étienne van de Walle answered that bringing on the menses was a medical aim in its own right, and that the use of these plants does not prove fertility control (van de Walle 1997, not read, via MA-08). The record below shows that the plants which act on the womb do so at doses that poison the liver, brain or kidneys.

Pennyroyal (Mentha pulegium in Europe, Hedeoma pulegioides in North America). Leaf, tea and distilled oil. The tradition: a mint of cottage gardens and pharmacies, taken as tea or oil to bring on a late period. The record: Anderson reviewed 18 cases from 1869 to 1996. Ten millilitres or more of oil, about two teaspoons, caused moderate to severe toxicity, smaller amounts mostly stomach upset. Two women before 1905 fell into coma after 5 mL and two survived 30 mL. Anderson's fatal case had taken pennyroyal extract with black cohosh (Anderson 1996, abstract, and NTP 1998). An 18-year-old who took about 30 mL died on the seventh day with liver necrosis (NTP 1998, summarising a CDC report of 1978), and other cases had liver failure and bleeding (Sullivan 1979, title only). Two infants given home-made mint tea containing pennyroyal developed liver failure and brain injury, and one died (Bakerink 1996, abstract). Pharmacology: European oil is about 75 to 85 per cent pulegone (range 62 to 97), American Hedeoma oil about 30 per cent. UK testing found 73.3 per cent in a pennyroyal oil and 0 to 27 parts per million in commercial mint teas. The liver turns pulegone into menthofuran and other toxic metabolites, and N-acetylcysteine has been suggested as treatment (NTP 1998). The brief's warning holds: tea carries far less pulegone than oil, so stories of safe tea say nothing about the oil, and no dose of either is known to end a pregnancy without poisoning the woman. Lookalikes: other mints, and the American plant, a different genus, is also toxic. Grade X.

Tansy (Tanacetum vulgare). Leaf, flower and distilled oil. The tradition: a bitter, yellow-buttoned herb of European and colonial American gardens, used against worms and to bring on the menses. The record: a Boston report of 1833 recorded two deaths in a year from the oil. A 21-year-old Boston seamstress died within hours of taking it in 1851. A young woman in Rochester took a spoonful "to promote the catamenial discharge" and her doctor could do nothing, and a woman about 3 months pregnant took about an ounce in 1867 and convulsed (nineteenth-century case reports, titles and snippets only) [VERIFY]. Pharmacology: the oil is about half thujones, which cause convulsions. The rat oral lethal dose is about 1.15 g/kg for the oil and 192 to 230 mg/kg for thujone, and JECFA could set no acceptable daily intake (JECFA 1981). Lookalike: tansy ragwort (Jacobaea vulgaris) has daisy-like flowers with about 13 ray petals, where tansy has petal-less buttons and strongly aromatic leaves, and ragwort's pyrrolizidine alkaloids destroy the liver (King County, TR-15). Grade X.

Rue (Ruta graveolens, R. chalepensis). Leaf, root and infusion. The tradition: across the Mediterranean and Latin America, ruda is a herb of protection and of women's medicine, taken as tea to bring on the period. The record: the Montevideo poison centre saw 86 women between 1986 and 1999 who had taken herbal infusions of about 30 species to end a pregnancy, and four died after rue, with multiple organ failure (Ciganda 2003, abstract). A German

forensic report describes criminal abortion with rue roots (Wehr 1974, title only). Pharmacology: extracts prevented pregnancy after mating in rats but not in hamsters (Gandhi 1991, abstract). Confusion: "Syrian rue" (Peganum harmala) is a different plant with different poisons [VERIFY]. Grade X as an abortifacient.

Savin (Juniperus sabina). Young shoots and oil. The tradition: a low European juniper of cottage gardens, the strongest of the old emmenagogues. The record: Pereira's nineteenth-century materia medica gives Mohrenheim's case, a woman who took an infusion, vomited violently, aborted, bled and died, and a death recorded by Dewees. Fodéré described a woman who took 100 drops of the oil a day for 20 days and carried to term. The emmenagogue dose was 2 to 6 drops, and Pereira wrote that abortion came only at the risk of the woman's life (Pereira, via Henriette's Herbal). Pharmacology: in mice the oil was toxic to embryos, and dams that lost their litters had liver damage (Pages 1989, abstract). Lookalikes: common juniper (J. communis), the gin berry, has needle leaves where savin has scale leaves and a rank smell, and eastern red cedar (J. virginiana) was substituted for it and confused with it (Henriette's Herbal, search summary). Grade X.

Cotton root (Gossypium species, root bark). The tradition: enslaved women in the American South used cotton root, according to physicians of the time. The record: the United States Dispensatory of 1918 cites Bouchelle in 1840 that enslaved women "habitually resorted" to it, notes that Scott in 1911 found it weaker than ergot on animal wombs, and gives an old dose of 2 to 3.9 g of root bark with no known active principle (US Dispensatory 1918, via Henriette's Herbal). Perrin reads the slave narratives as evidence of resistance and possibly contraception, on a thin record (Perrin 2001, abstract). No link between gossypol, the seed pigment that harms sperm (THRIVING library, MA-08), and ending pregnancy was found. Grade D, with no evidence that it works and no recorded death in this search.

Quinine (Cinchona bark, or salvaged tablets). The tradition: in malarial regions and in the twentieth-century United States, women took large doses to end pregnancies. The record: of four women who did so, only one aborted, and the authors called quinine ineffective even at toxic doses, with a risk of kidney failure (Dannenberg 1983, abstract). A German report describes a fatal poisoning after an attempted abortion (Willner 1961, title only). Pharmacology: adult deaths have followed 2 to 8 g, the average fatal dose is about 8 g, and blindness is common above 5 g and almost universal above 10 g (IPCS PIM 464, FDA quinine sulfate label, both through search summaries) [VERIFY]. Ringing ears, deafness, blurred sight and vomiting come first. Grade X.

The mechanical and chemical methods. In the English Midlands around 1900, women took diachylon, a lead plaster, to end pregnancies, and doctors reported lead poisoning from it (Hall and Ransom 1906, title only). The practice reportedly spread in Sheffield after a lead contamination of the water supply had been followed by miscarriages (Victorian Web, secondary) [VERIFY]. The medical literature of the 1960s and 1970s records deaths from soap solutions in the womb, fat embolism after soap, and burns from potassium permanganate placed in the vagina [VERIFY, titles only]. Catheters, sticks and needles carried infection and perforation, and in Rio catheters produced more infection, injury and transfusion than misoprostol (Costa and Vessey 1993). In the Maghreb, Atractylis gummifera, used as an abortifacient, has killed many women (THRIVING library, TR-15). The household methods kill by infection, perforation, poisoning and embolism, at rates far above any medical method.

Evidence grades

Practice	Grade	Note
Watchful waiting for incomplete miscarriage	A	91% complete, most within 2 weeks
Misoprostol 600 μg oral or 400 μg sublingual for incomplete miscarriage under 12 to 13 weeks	A	about 94% complete

Practice	Grade	Note
Misoprostol for suspected missed miscarriage without ultrasound	X at village	diagnosis unsafe without imaging
MVA by trained mid-level provider	A	equivalent to doctors
Sharp curettage	X where MVA exists	more blood, pain and time
Curettage during fever without antibiotics	X	Napier 1927
Antibiotics for septic abortion	A for use, B for regimen	no best regimen
Tetanus toxoid and antiserum after unsafe abortion	B	
Uterine massage and uterotonics for bleeding	A, from postpartum evidence	MA-02
Clinical signs for ectopic pregnancy	B	often atypical
Pennyroyal, tansy, rue, savin, quinine, lead, soap, permanganate	X	poisons at effective doses
Cotton root	D	no evidence of effect or harm
Counselling before and after self-induced abortion (Uruguay model) [OWNER]	B	no serious complications in 675

Means ledger

Rung	What it can do	What changes in the outcome
Hands	Recognise miscarriage, ectopic, haemorrhage and sepsis signs. Rub the womb. Lay flat, keep warm. Count pulse and pads. Carry to help	Detects the women who will die without more
Hearth	Boiled water, clean cloth, sips of salted sweet water for a conscious woman, heat, rest, nothing in the vagina	Prevents infection from added dirt, supports mild blood loss
Garden and still	Thermometer if salvaged, soap, clean pads, alcohol for hands. No plant adds safety. Records of dates	Better watching. No plant treatment is safe
Village dispensary (300)	Misoprostol for incomplete miscarriage, oral antibiotics, tetanus toxoid, pregnancy and ectopic screening by history and examination, a runner to the district	Most incomplete miscarriages completed safely. Mild infection treated
District infirmary (3,000)	MVA, injected antibiotics, intravenous fluids, oxytocin and ergometrine, blood donation from tested relatives, laparotomy for ectopic or perforation if a surgeon exists	Septic and bleeding women survive. Ectopic survivable only here

Rung	What it can do	What changes in the outcome
Hospital before the Fall	Ultrasound, blood tests, transfusion, laparoscopy, intensive care, anti-D for Rhesus-negative women [VERIFY]	Death below 1 per 100,000 procedures

Harm test

Misoprostol. Harms: heavy bleeding, fever up to 40 °C, diarrhoea and vomiting, and failure with a continuing damaged pregnancy (Pastuszak 1998). Never give to a woman with a suspected ectopic, to a woman in shock, to a woman with a womb over 12 weeks at the village, or to one who may have a living wanted pregnancy. Use in a woman with a scar on the womb carries a risk of rupture at larger sizes [VERIFY]. Signs it is going wrong: bleeding past 2 pads an hour for 2 hours, fever after 24 hours, pain that grows after the tissue has passed. Then follow the bleeding and sepsis protocols.

MVA and curettage. Harms: perforation, cervical tears, infection, retained tissue, blood in the womb. Who must never receive it at the village: anyone. It belongs at the district. Signs: an instrument passing too far, fat or bowel in the aspirate, sudden pain, a rigid belly.

Antibiotics and uterotonics. Gentamicin damages hearing and kidneys, worse in the dehydrated (THRIVING library, IN-04). Doxycycline should not be given if the pregnancy might continue [VERIFY]. Ergometrine and methylergonovine must not be given in high blood pressure (Ipas 2013).

Plants and chemicals. Pennyroyal oil: 5 mL has caused coma and 10 mL moderate to severe poisoning, with death from liver failure on days 6 or 7. Tansy oil: convulsions and death within hours, reported after a spoonful to an ounce. Rue: multiple organ failure. Savin: vomiting, bleeding and death. Quinine: blindness, deafness and kidney failure from 2 to 8 g. Lead: poisoning. Misidentification: tansy for ragwort, savin for other junipers, any mint for pennyroyal. If a woman has taken any of these: stop it, keep the container, nothing by mouth if she is drowsy or fitting, and treat by TR-15. Watch for jaundice and bleeding gums over the following week after pennyroyal (THRIVING library, TR-15).

Waiting. Harms: haemorrhage and infection, about 3 per cent infection in MIST. A missed ectopic. Who must not wait: a woman with heavy bleeding, fever, shock, one-sided pain or shoulder pain.

Red flags

Each sign means she may die without what the village cannot give. Carry her to the district at once and keep treating on the way.

- Soaking more than 2 pads an hour for 2 hours, or a pulse over 100 that is rising, or fainting.
- Fever of 38 °C or more more than 24 hours after misoprostol, or with foul discharge, or with a tender womb.
- Systolic blood pressure below 90, breathing over 24 a minute, confusion.
- Severe pain on one side, pain in the shoulder tip, or fainting in a woman with a late period, especially if the cervix is closed and nothing has passed.
- A hard, silent, tender belly after any instrument was used.
- Jaundice, drowsiness, convulsions or bleeding after any herbal or chemical remedy.
- Tetanus signs: a stiff jaw, spasms.

What to do anyway: lay her flat, legs raised, warm. Give antibiotics for any sign of infection, misoprostol for heavy bleeding unless ectopic is suspected, and sips if she is conscious. Put nothing into the vagina. Stay with her.

Honest comfort: a ruptured ectopic without a surgeon will probably kill within hours, and septic shock without antibiotics carries at least Napier's 1 in 4. Tell her she is not alone, relieve her pain, let her family be with her, and do not blame her.

The case against

Against the death figures. Bernard Nathanson admitted that campaigners inflated American death figures, and the official 1940 count was about 1,700, not 10,000 (Straight Dope, secondary). Gold, for the Guttmacher Institute, also credits antibiotics with most of the decline (Gold 2003). Antibiotics and post-abortion care, more than law, saved those lives, which supports this report's protocols at any stance.

Against Romania as a lesson. Elard Koch and colleagues showed that Chile's maternal mortality kept falling after a total ban (Koch 2012), and opponents of abortion argue from this that law does not kill women when care is good. Supporters of access answer that Chile treated complications and Romania did not. Both readings support post-abortion care.

Against Sedgh's finding that law does not reduce abortion. Sedgh's comparison is across countries and cannot show that a given change of law in a given place would leave the number unchanged. Romania's abortion rate roughly doubled after the ban was lifted (Serbanescu 1995), which suggests the ban had reduced recorded abortions, or that it had hidden them.

Against misoprostol harm reduction. Miller's Dominican data were poor and temporal (Miller 2005). Misoprostol damages children when it fails (Gonzalez 1998, Pastuszak 1998). Misoprostol alone leaves about 7 per cent of pregnancies ongoing and about 22 per cent needing surgery (Raymond 2019). Opponents of the Uruguay model object that counselling before self-induction facilitates it, a moral objection rather than an evidential one, and no named critic was read [VERIFY]. These are arguments for the owner [OWNER].

Against medicalising miscarriage. Luise and MIST showed waiting about as safe as treatment, and Kim found misoprostol not clearly better than waiting. Most miscarriages need only watching. Misoprostol buys speed, not survival.

Against Riddle. Van de Walle and others argue that the emmenagogue tradition is weak evidence of effective fertility control (van de Walle 1997, not read). The pharmacology supports the critics on the abortifacients: the plants that act do so by poisoning.

Against the modern consensus on prompt evacuation in sepsis. Napier found the curette harmful in fever before antibiotics (Napier 1927). Where the village has no antibiotics, his experience is the more relevant guide, and an untrained hand should not empty an infected womb.

10-line summary

1. About 1 recognised pregnancy in 7 ends in miscarriage, and no stance avoids caring for it.
2. Unsafe abortion killed about 47,000 women in 2008 (Åhman and Shah 2011), not a figure from Sedgh 2012.
3. In Glasgow in 1923 to 1925, 1 in 4 women with septic abortion died without antibiotics.
4. American abortion deaths fell by over 90 per cent between 1940 and 1965, mainly with antibiotics.
5. Watching alone completes about 9 in 10 incomplete miscarriages, most within 2 weeks.
6. A single 600 μg oral or 400 μg sublingual misoprostol dose completes about 94 per cent.
7. MVA by trained mid-level providers is as safe as by doctors, and safer than sharp curettage.
8. Ectopic pregnancy mimics miscarriage, kills by internal bleeding and needs surgery.
9. Every traditional abortifacient tested acts, if at all, at a poisoning dose.
10. Post-abortion care, antibiotics, uterotonics and a trained hand save lives at any stance.

Open questions

- Pre-antibiotic septic abortion deaths outside hospital, and ruptured ectopic deaths without surgery.
- Whether salvaged misoprostol 5 to 20 years past expiry keeps enough potency to complete a miscarriage.
- The best oral antibiotic combination for septic abortion when injection is not possible.
- Whether misoprostol given with antibiotics is safe in septic incomplete miscarriage when evacuation is days away.
- Whether a lay healer can judge uterine size well enough for the 12-week limit, and the scale of Rhesus disease without anti-D.
- The owner's stance on teaching any method of ending a pregnancy, on counselling for self-induced abortion, and on MVA beyond post-abortion care [OWNER].

Sources to read in full

1. Ipas, Woman-Centered Postabortion Care Reference Manual, second edition (Ipas 2013).
2. Hesperian, Where Women Have No Doctor, chapter on complications of abortion.
3. WHO Abortion care guideline 2022, chapters on post-abortion care and task sharing.
4. Napier 1927, the Glasgow thesis.
5. Kim 2017 Cochrane review on incomplete miscarriage.
6. Warriner 2006 on mid-level providers.
7. Gold 2003 with the Straight Dope account of the contested US figures.
8. Koch 2012 with Stephenson 1992, read together.
9. Anderson 1996 with the NTP 1998 pulegone review.
10. Riddle 1997 with van de Walle 1997, read together.

At the bedside after the Fall

The household. Know the signs: bleeding with a late period, tissue passing, pain, fever, fainting. Rest her, keep her warm, count pads and pulse, give sips, put nothing in the vagina, and save any tissue in a clean dish for the healer. Never give a woman pennyroyal, tansy, rue, savin or quinine to bring on a period. First failure to expect: a woman bleeding in secret because she fears blame, found late.

The village of 300. Expect about 10 births and about 2 recognised miscarriages a year, and one ectopic every 5 to 10 years [VERIFY]. Needs: one healer trained to recognise incomplete miscarriage, ectopic and sepsis, to examine the cervix and estimate womb size, misoprostol in intact blisters, oral antibiotics (amoxicillin, metronidazole, doxycycline), tetanus toxoid if any, a thermometer, a watch, clean pads, a stretcher and a runner. Records: date of last period, uterine size, drugs given, outcome. First failure to expect: misoprostol given to an ectopic or to a woman whose dates were wrong, or the damp ruining the stock.

The district of 3,000. Expect about 100 births, about 18 recognised miscarriages, a few septic losses and about one ectopic a year [VERIFY]. Needs: a nurse or doctor trained in MVA under supervision, two aspirators with cannulae and a sterilising routine, local anaesthetic, injected antibiotics (ampicillin, gentamicin, metronidazole, ceftriaxone), intravenous fluids, oxytocin and ergometrine, tetanus serum and toxoid, tested blood donors, and someone able to open the abdomen for an ectopic. First failure to expect: a septic woman arriving after a day of travel, past the point where emptying the womb saves her.

Protocols

These protocols treat a woman after a pregnancy has been lost, is being lost, or may have been ended. They do not describe any way to end a pregnancy. Ask in private and without judgement whether anything was taken or inserted, because it changes the care (Ipas 2013).

Protocol 1. Bleeding in early pregnancy: first assessment (household and village)

1. Ask: first day of the last period, pain (where, how strong, constant or in waves), shoulder pain, fainting, fever, anything taken or put inside.
2. Count pulse for a full minute, breathing for a full minute, and take temperature. Pulse over 100, breathing over 30, or fainting: go to Protocol 4 now.
3. Look at the pads in the last 2 hours. More than 2 soaked an hour for 2 hours: Protocol 4.
4. Feel the belly with a flat hand. One-sided tenderness, a hard belly, or shoulder pain with a late period: Protocol 6.
5. A trained healer with washed hands and clean gloves or boiled cloth looks at the cervix. Open with tissue or bleeding coming through: inevitable or incomplete miscarriage, go to Protocols 2 or 3. Closed with light bleeding and no pain: threatened miscarriage, rest and watch, recheck in 24 hours.
6. Estimate womb size by feeling above the pubic bone and by examination. At 12 weeks the top of the womb is just above the pubic bone [VERIFY]. Record it.
7. Fever of 38 °C or more, foul discharge or tender womb: Protocol 5.
8. Never give misoprostol at this step if the cervix is closed and no tissue has passed.

Protocol 2. Watchful waiting for incomplete miscarriage (village)

1. Use only if: pulse under 100, bleeding under 2 pads an hour, no fever, no one-sided or shoulder pain, womb 12 weeks or less.
2. Explain that most finish within 2 weeks, that cramping and bleeding heavier than a period are expected for some hours, and what the danger signs are.
3. She rests at home with someone who can run for help. Nothing in the vagina, no bathing in a pond or tub, until bleeding stops [VERIFY for duration].
4. Check pulse, temperature and pads twice a day for 3 days, then daily.
5. Save tissue that passes for the healer.
6. Review at 7 days and at 14 days. Bleeding settling and womb small: done.
7. Not complete by 14 days, or wanting it to end sooner: offer Protocol 3. Bleeding beyond 2 weeks, fever or rising pain at any time: Protocol 3, 4 or 5.

Protocol 3. Misoprostol for incomplete miscarriage (village dispensary)

1. Check all of these: cervix open, tissue passing or bleeding, womb 12 weeks or less, pulse under 100, blood pressure normal if measured, no fever, no one-sided or shoulder pain, no allergy to misoprostol.
2. Check the tablets: from an intact blister, not crumbled or damp.
3. Give either 600 μg by mouth (three 200 μg tablets swallowed at once) or 400 μg under the tongue (two 200 μg tablets held for 30 minutes, then swallow any fragments). One dose only.
4. Warn of cramping and heavier bleeding within hours, and of shivering and fever in the first 24 hours.
5. Give pain relief if available, ibuprofen 400 mg every 8 hours with food [VERIFY].
6. No antibiotic is needed for misoprostol alone unless there are signs of infection (Ipas 2013).
7. Watch as in Protocol 2. Review at 7 to 14 days.
8. Not complete at 14 days, or bleeding heavily: send to the district for aspiration.
9. Record the date, the dose, the batch and the outcome.

Protocol 4. Heavy bleeding and shock after a loss (any rung)

1. Lay her flat, legs raised, head turned to the side, keep her warm.
2. Rub the womb firmly through the lower belly until it hardens, and keep rubbing if it softens.

3. If the cervix is open and tissue can be seen at the opening, a trained healer with gloves removes it gently with fingers or ring forceps. Do not go further.
4. Give misoprostol 800 μg under the tongue (four 200 μg tablets held for 30 minutes), unless an ectopic is suspected.
5. District: oxytocin 20 units in 1 litre of saline at 60 drops a minute, or ergometrine or methylergonovine 0.2 mg by injection, repeat after 15 minutes up to 5 doses, never in high blood pressure (Ipas 2013).
6. District: 1 litre of saline or Ringer's lactate fast, reassess, a second litre if pulse and pressure stay abnormal, blood from a tested donor if still unstable after 2 litres.
7. If no drip: sips of oral rehydration solution if conscious (MA-02).
8. Check pulse every 15 minutes and write it down.
9. If bleeding continues after these steps, carry her to the district for aspiration. Give antibiotics on the way if any are present, because haemorrhage and retained tissue breed infection.

Protocol 5. Infection and sepsis after a loss

1. Signs: fever of 38 °C or more (after 24 hours if misoprostol was given), chills, lower belly pain, foul discharge, tender womb. Sepsis: systolic under 90, pulse over 100, breathing over 24, or confusion.
2. Start antibiotics at once, before moving her.
    - Village by mouth: amoxicillin 1 g every 8 hours with metronidazole 500 mg every 8 hours (MA-04), or doxycycline 100 mg twice a day with metronidazole 500 mg three times a day (Hesperian). Ceftriaxone 250 mg by injection once at the start if available.
    - District by injection: ampicillin 2 g every 6 hours with gentamicin 5 mg/kg once a day and metronidazole 500 mg every 8 hours, until 48 hours without fever, then by mouth to at least 7 days in all (Ipas 2013), 10 days by Hesperian.
3. Give tetanus toxoid 0.5 mL if anything may have been inserted. If she was never vaccinated, add antitetanus serum 1,500 units, and repeat toxoid after 4 weeks.
4. Treat shock by Protocol 4.
5. Retained tissue in an infected womb: antibiotics first, then evacuation at the district by aspiration as soon as she is in the hands of a trained provider. Do not curette or scrape at the village.
6. No improvement in 24 hours: think of retained tissue, an abscess or an injury, and send to the district.
7. Hard, silent belly or shoulder pain after an instrument: nothing by mouth unless the journey takes more than 12 hours, carry to the district for surgery.

Protocol 6. Suspected ectopic pregnancy

1. Suspect it in any woman with a late period and pain, especially one-sided pain, shoulder-tip pain, fainting or a fast pulse with little bleeding, a closed cervix and no tissue passed.
2. Suspect it more after a previous ectopic, tubal surgery, a past pelvic infection or with an IUD in place.
3. Do not give misoprostol. Do not wait at home.
4. Lay her flat, legs raised, warm. Start the journey to the district at once, lying down.
5. Shock or collapse: Protocol 4 steps 1, 6 and 7, and continue the journey.
6. At the district: only an operation stops the bleeding. If there is no one to operate, give pain relief, fluids and company.

Protocol 7. Aftercare and follow-up

1. Review at 7 to 14 days: bleeding, fever, pain, womb size.
2. Bleeding lighter than a period by 2 weeks is expected. Bleeding beyond 2 weeks, fever over 38 °C or pulse over 100 means a return visit at once (Hesperian, A Book for Midwives).
3. Rest for about a week, nothing in the vagina for 5 days (Hesperian, A Book for Midwives).

4. Offer iron-rich food after heavy blood loss.
5. Offer contraception by MA-08. All methods can start at once after an uncomplicated loss, except an IUD or sterilisation while infection is present (Ipas 2013).
6. Ask about grief, fear and safety. A loss is a bereavement for many women, and some will have acted under pressure.
7. Record the outcome in the village book.

Numbers to carry

1. 1 in 7 known pregnancies ends in miscarriage.
2. About 9 in 10 incomplete miscarriages finish on their own, most within 2 weeks.
3. Misoprostol for incomplete miscarriage: 600 μg by mouth or 400 μg under the tongue, once, womb 12 weeks or less.
4. Misoprostol for heavy bleeding: 800 μg under the tongue.
5. Danger bleeding: more than 2 pads an hour for 2 hours.
6. Danger pulse 100, danger fever 38 °C (after 24 hours if misoprostol was given), danger systolic 90.
7. Without antibiotics, 1 in 4 women with septic abortion died (Glasgow, 1923 to 1925).
8. Ectopic warning: late period with one-sided or shoulder pain or fainting. Never give misoprostol.
9. Pennyroyal oil: 10 mL causes moderate to severe poisoning. Quinine: 2 to 8 g has killed.
10. Follow-up at 7 to 14 days.

References

1. Åhman E, Shah IH. New estimates and trends regarding unsafe abortion mortality. International Journal of Gynecology and Obstetrics 2011, 115(2):121-126 (abstract only). https://pubmed.ncbi.nlm.nih.gov/21885049/

2. Sedgh G, Singh S, Shah IH, Åhman E, Henshaw SK, Bankole A. Induced abortion: incidence and trends worldwide from 1995 to 2008. Lancet 2012, 379:625-632 (abstract only). https://pubmed.ncbi.nlm.nih.gov/22264435/

3. Shah I, Åhman E. Unsafe abortion in 2008: global and regional levels and trends. Reproductive Health Matters 2010, 18(36):90-101 (abstract only). https://pubmed.ncbi.nlm.nih.gov/21111353/

4. Say L, Chou D, Gemmill A, et al. Global causes of maternal death: a WHO systematic analysis. Lancet Global Health 2014, 2:e323-e333 (abstract only). https://pubmed.ncbi.nlm.nih.gov/25103301/

5. Ganatra B, Gerdts C, Rossier C, et al. Global, regional, and subregional classification of abortions by safety, 2010-14: estimates from a Bayesian hierarchical model. Lancet 2017, 390:2372-2381 (abstract only). https://pubmed.ncbi.nlm.nih.gov/28964589/

6. Our World in Data. The human cost of unsafe abortions. Undated web page (secondary summary). https://ourworldindata.org/the-human-cost-of-unsafe-abortions

7. Gold RB. Lessons from before Roe: will past be prologue? Guttmacher Report on Public Policy 2003, 6(1). https://www.guttmacher.org/gpr/2003/03/lessons-roe-will-past-be-prologue

8. The Straight Dope. Before Roe v. Wade, did 10,000 women a year die from illegal abortions? Undated web article (secondary summary). https://www.straightdope.com/21343641/before-em-roe-em-v-em-wade-em-did-10-000-women-a-year-die-from-illegal-abortions

9. The Spectator. Abortion deaths (letter), 2 March 1974 (read through a search summary). https://archive.spectator.co.uk/article/2nd-march-1974/5/abortion-deaths

10. Nature 1939, 144:19, report on the Inter-Departmental Committee on Abortion (title not read, search summary only). https://www.nature.com/articles/144019a0

11. Napier W. Puerperal infection: a review of five hundred cases. MD thesis, University of Glasgow 1927 (read in full). https://theses.gla.ac.uk/80677/1/27535136.pdf

12. Stephenson P, Wagner M, Badea M, Serbanescu F. Commentary: the public health consequences of restricted induced abortion, lessons from Romania. American Journal of Public Health 1992, 82(10):1328-1331 (abstract only). https://pubmed.ncbi.nlm.nih.gov/1415854/

13. Hord C, David HP, Donnay F, Wolf M. Reproductive health in Romania: reversing the Ceausescu legacy. Studies in Family Planning 1991, 22(4):231-240 (abstract only). https://pubmed.ncbi.nlm.nih.gov/1949105/

14. Serbanescu F, Morris L, Stupp P, Stanescu A. The impact of recent policy changes on fertility, abortion, and contraceptive use in Romania. Studies in Family Planning 1995, 26(2):76-87 (abstract only). https://pubmed.ncbi.nlm.nih.gov/7618197/

15. Koch E, Thorp J, Bravo M, et al. Women's education level, maternal health facilities, abortion legislation and maternal deaths: a natural experiment in Chile from 1957 to 2007. PLoS One 2012, 7(5):e36613 (abstract only). https://pubmed.ncbi.nlm.nih.gov/22574194/

16. Costa SH, Vessey MP. Misoprostol and illegal abortion in Rio de Janeiro, Brazil. Lancet 1993, 341:1258-1261 (abstract only). https://pubmed.ncbi.nlm.nih.gov/8098402/

17. Faúndes A, Santos LC, Carvalho M, Gras C. Post-abortion complications after interruption of pregnancy with misoprostol. Advances in Contraception 1996, 12:1-9 (abstract only). https://pubmed.ncbi.nlm.nih.gov/8739511/

18. Miller S, Lehman T, Campbell M, et al. Misoprostol and declining abortion-related morbidity in Santo Domingo, Dominican Republic: a temporal association. BJOG 2005, 112(9):1291-1296 (abstract only). https://pubmed.ncbi.nlm.nih.gov/16101610/

19. Singh S, Monteiro MF, Levin J. Trends in hospitalization for abortion-related complications in Brazil, 1992-2009: why the decline in numbers and severity? International Journal of Gynecology and Obstetrics 2012, 118 Suppl 2:S99-S106 (abstract only). https://pubmed.ncbi.nlm.nih.gov/22920629/

20. Briozzo L, Vidiella G, Rodríguez F, et al. A risk reduction strategy to prevent maternal deaths associated with unsafe abortion. International Journal of Gynecology and Obstetrics 2006, 95:221-226 (abstract only). https://pubmed.ncbi.nlm.nih.gov/17010348/

21. Gonzalez CH, Marques-Dias MJ, Kim CA, et al. Congenital abnormalities in Brazilian children associated with misoprostol misuse in first trimester of pregnancy. Lancet 1998, 351:1624-1627 (abstract only). https://pubmed.ncbi.nlm.nih.gov/9620717/

22. Pastuszak AL, Schüler L, Speck-Martins CE, et al. Use of misoprostol during pregnancy and Möbius' syndrome in infants. New England Journal of Medicine 1998, 338:1881-1885 (abstract only). https://pubmed.ncbi.nlm.nih.gov/9637807/

23. Wilcox AJ, Weinberg CR, O'Connor JF, et al. Incidence of early loss of pregnancy. New England Journal of Medicine 1988, 319:189-194 (abstract only). https://pubmed.ncbi.nlm.nih.gov/3393170/

24. Quenby S, Gallos ID, Dhillon-Smith RK, et al. Miscarriage matters: the epidemiological, physical, psychological, and economic costs of early pregnancy loss. Lancet 2021, 397:1658-1667 (abstract only). https://pubmed.ncbi.nlm.nih.gov/33915094/

25. Luise C, Jermy K, May C, et al. Outcome of expectant management of spontaneous first trimester miscarriage: observational study. BMJ 2002, 324:873-875 (abstract only, cited as Luise 2002a). https://pubmed.ncbi.nlm.nih.gov/11950733/

26. Luise C, Jermy K, Collons WP, Bourne TH. Expectant management of incomplete, spontaneous first-trimester miscarriage: outcome according to initial ultrasound criteria and value of follow-up visits. Ultrasound in Obstetrics and Gynecology 2002, 19:580-582 (abstract only, cited as Luise 2002b). https://pubmed.ncbi.nlm.nih.gov/12099260/

27. Trinder J, Brocklehurst P, Porter R, et al. Management of miscarriage: expectant, medical, or surgical? Results of randomised controlled trial (miscarriage treatment (MIST) trial). BMJ 2006, 332:1235-1240 (abstract only). https://pubmed.ncbi.nlm.nih.gov/16707509/

28. Kim C, Barnard S, Neilson JP, et al. Medical treatments for incomplete miscarriage. Cochrane Database of Systematic Reviews 2017, issue 1, CD007223 (abstract only). https://pubmed.ncbi.nlm.nih.gov/28138973/

29. Blum J, Winikoff B, Gemzell-Danielsson K, et al. Treatment of incomplete abortion and miscarriage with misoprostol. International Journal of Gynecology and Obstetrics 2007, 99 Suppl 2:S186-S189 (abstract only). https://pubmed.ncbi.nlm.nih.gov/17961569/

30. Dao B, Blum J, Thieba B, et al. Is misoprostol a safe, effective and acceptable alternative to manual vacuum aspiration for postabortion care? Results from a randomised trial in Burkina Faso, West Africa. BJOG 2007, 114:1368-1375 (abstract only). https://pubmed.ncbi.nlm.nih.gov/17803715/

31. Weeks A, Alia G, Blum J, et al. A randomized trial of misoprostol compared with manual vacuum aspiration for incomplete abortion. Obstetrics and Gynecology 2005, 106:540-547 (abstract only). https://pubmed.ncbi.nlm.nih.gov/16135584/

32. Diop A, Raghavan S, Rakotovao JP, et al. Two routes of administration for misoprostol in the treatment of incomplete abortion: a randomized clinical trial. Contraception 2009, 79:456-462 (abstract only). https://pubmed.ncbi.nlm.nih.gov/19442782/

33. Shochet T, Diop A, Gaye A, et al. Sublingual misoprostol versus standard surgical care for treatment of incomplete abortion in five sub-Saharan African countries. BMC Pregnancy and Childbirth 2012, 12:127 (abstract only). https://pubmed.ncbi.nlm.nih.gov/23150927/

34. Ibiyemi KF, Ijaiya MA, Adesina KT. Randomised trial of oral misoprostol versus manual vacuum aspiration for the treatment of incomplete abortion at a Nigerian tertiary hospital. Sultan Qaboos University Medical Journal 2019, 19:e38-e43 (abstract only). https://pubmed.ncbi.nlm.nih.gov/31198594/

35. Ani VC, Enebe JT, Dim CC, et al. Sublingual misoprostol versus manual vacuum aspiration for treatment of incomplete abortion in Nigeria: a randomized control study. Pan African Medical Journal 2022, 41:90 (abstract only). https://pubmed.ncbi.nlm.nih.gov/35432695/

36. Zhang J, Gilles JM, Barnhart K, et al. A comparison of medical management with misoprostol and surgical management for early pregnancy failure. New England Journal of Medicine 2005, 353:761-769 (abstract only). https://pubmed.ncbi.nlm.nih.gov/16120856/

37. Schreiber CA, Creinin MD, Atrio J, et al. Mifepristone pretreatment for the medical management of early pregnancy loss. New England Journal of Medicine 2018, 378:2161-2170 (abstract only). https://pubmed.ncbi.nlm.nih.gov/29874535/

38. World Health Organization. Abortion care guideline. Geneva 2022, recommendations on post-abortion care and task sharing as recorded in the BIGG database (not read in full). https://bigg-rec.bvsalud.org/en/recommendations/4fa66b56577144aefc92b4446e037e0ee5141b3a

39. Ipas. Recommended medication regimen for treatment of incomplete and missed abortion for 13 weeks or larger uterine size. Clinical Updates in Reproductive Health, reviewed 6 November 2025 (cited as Ipas 2025). https://www.ipas.org/clinical-update/english/postabortion-care/recommended-medication-regimen-for-treatment-of-incomplete-and-missed-abortion-for-13-weeks-or-larger-uterine-size/

40. Ipas. Misoprostol for postabortion care: clinical flow chart, Tool 5B, 2022 (search summary only, cited as Ipas 2022). https://www.ipas.org/wp-content/uploads/2022/07/Tool-5B-Clinical-Flow-Chart-wall-poster_MPATK2E11.pdf

41. Turner KL, Huber A (eds). Woman-centered postabortion care: reference manual, second edition. Ipas, Chapel Hill 2013 (read in part: uterine evacuation, clinical assessment, antibiotics, complications, contraception, cited as Ipas 2013). https://www.ipas.org/wp-content/uploads/2020/06/PACREFE13-WomenCenteredPostabortionCareReferenceManual.pdf

42. Raymond EG, Harrison MS, Weaver MA. Efficacy of misoprostol alone for first-trimester medical abortion: a systematic review. Obstetrics and Gynecology 2019, 133:137-147 (abstract only). https://pubmed.ncbi.nlm.nih.gov/30531568/

43. Moseson H, Jayaweera R, Egwuatu I, et al. Effectiveness of self-managed medication abortion between 9 and 16 weeks of gestation. Obstetrics and Gynecology 2023, 142:330-338 (abstract only). https://pubmed.ncbi.nlm.nih.gov/37411022/

44. Bracken H, Clark W, Lichtenberg ES, et al. Alternatives to routine ultrasound for eligibility assessment prior to early termination of pregnancy with mifepristone-misoprostol. BJOG 2011, 118:17-23 (abstract only). https://pubmed.ncbi.nlm.nih.gov/21091926/

45. Karman H, Potts M. Very early abortion using syringe as vacuum source. Lancet 1972, 1:1051-1052 (title only). https://pubmed.ncbi.nlm.nih.gov/4112188/

46. Karman H. The paramedic abortionist. Clinical Obstetrics and Gynecology 1972, 15:379-387 (title only). https://pubmed.ncbi.nlm.nih.gov/5078021/

47. Tunc TE. Harvey Karman and the super coil fiasco: a forgotten episode in the history of American abortion technology. European Journal of Contraception and Reproductive Health Care 2008, 13:4-8 (abstract and secondary summaries). https://pubmed.ncbi.nlm.nih.gov/18283597/

48. Tunçalp Ö, Gülmezoglu AM, Souza JP. Surgical procedures for evacuating incomplete miscarriage. Cochrane Database of Systematic Reviews 2010, CD001993 (abstract only). https://pubmed.ncbi.nlm.nih.gov/20824830/

49. Warriner IK, Meirik O, Hoffman M, et al. Rates of complication in first-trimester manual vacuum aspiration abortion done by doctors and mid-level providers in South Africa and Vietnam: a randomised controlled equivalence trial. Lancet 2006, 368:1965-1972 (abstract only). https://pubmed.ncbi.nlm.nih.gov/17141703/

50. National Institute for Health and Care Excellence. Ectopic pregnancy and miscarriage: diagnosis and initial management, NG126, 2019, section on symptoms and signs of ectopic pregnancy (cited as NICE 2019). https://www.nice.org.uk/guidance/ng126/chapter/symptoms-and-signs-of-ectopic-pregnancy-and-initial-assessment

51. Leke RJ, Goyaux N, Matsuda T, Thonneau PF. Ectopic pregnancy in Africa: a population-based study. Obstetrics and Gynecology 2004, 103:692-697 (abstract only). https://pubmed.ncbi.nlm.nih.gov/15051561/

52. Creanga AA, Shapiro-Mendoza CK, Bish CL, et al. Trends in ectopic pregnancy mortality in the United States: 1980-2007. Obstetrics and Gynecology 2011, 117:837-843 (abstract only). https://pubmed.ncbi.nlm.nih.gov/21422853/

53. Udoh A, Effa EE, Oduwole O, et al. Antibiotics for treating septic abortion. Cochrane Database of Systematic Reviews 2016, issue 7, CD011528 (abstract only). https://pubmed.ncbi.nlm.nih.gov/27364644/

54. Hesperian Health Guides. Where Women Have No Doctor: complications of abortion. Online edition (read). https://en.hesperian.org/hhg/Where_Women_Have_No_Doctor:Complications_of_Abortion

55. Hesperian Health Guides. A Book for Midwives, chapter 22: helping a woman after a pregnancy ends early. Online edition (read). https://en.hesperian.org/hhg/A_Book_for_Midwives:Chapter_22:_Helping_a_woman_after_a_pregnancy_ends_early

56. Akhter S, Edwards C, Ikimalo J, Panezai S. Protecting adolescent girls against tetanus: induced abortion can predispose to tetanus. BMJ 1995, 311:748-749 (title only). https://pubmed.ncbi.nlm.nih.gov/7549704/

57. Ilikannu SO, Jombo SE, Ochei AU, et al. Tetanus infection complicating an unsafe abortion with resulting maternal mortality: a case report. Nigerian Medical Journal 2026, 67:1208-1213 (abstract only). https://pubmed.ncbi.nlm.nih.gov/42605416/

58. Anderson IB, Mullen WH, Meeker JE, et al. Pennyroyal toxicity: measurement of toxic metabolite levels in two cases and review of the literature. Annals of Internal Medicine 1996, 124:726-734 (abstract and NTP summary only). https://pubmed.ncbi.nlm.nih.gov/8633832/

59. National Toxicology Program, Integrated Laboratory Systems. Pennyroyal oil and pulegone: review of toxicological literature, executive summary. NIEHS 1998 (read in full). https://ntp.niehs.nih.gov/sites/default/files/ntp/htdocs/chem_background/exsumpdf/pennyroyal_508.pdf

60. Sullivan JB, Rumack BH, Thomas H, et al. Pennyroyal oil poisoning and hepatotoxicity. JAMA 1979, 242:2873-2874 (title only). https://pubmed.ncbi.nlm.nih.gov/513258/

61. Bakerink JA, Gospe SM, Dimand RJ, Eldridge MW. Multiple organ failure after ingestion of pennyroyal oil from herbal tea in two infants. Pediatrics 1996, 98:944-947 (abstract only). https://pubmed.ncbi.nlm.nih.gov/8909490/

62. Joint FAO/WHO Expert Committee on Food Additives. Tansy and tansy oil, toxicological monograph, WHO Food Additives Series 16, 1981 [VERIFY year] (read). https://inchem.org/documents/jecfa/jecmono/v16je25.htm

63. King County Noxious Weed Control Program. Common tansy identification and control, and Tansy ragwort identification and control. Web pages (search summary). https://kingcounty.gov/services/environment/animals-and-plants/noxious-weeds/weed-identification/common-tansy.aspx

64. Ciganda C, Laborde A. Herbal infusions used for induced abortion. Journal of Toxicology, Clinical Toxicology 2003, 41:235-239 (abstract only). https://pubmed.ncbi.nlm.nih.gov/12807304/

65. Wehr K. Criminal abortion using ruta roots (Ruta graveolens L.). Beiträge zur gerichtlichen Medizin 1974, 32:126-131 (title only, in German). https://pubmed.ncbi.nlm.nih.gov/4468771/

66. Gandhi M, Lal R, Sankaranarayanan A, Sharma PL. Post-coital antifertility action of Ruta graveolens in female rats and hamsters. Journal of Ethnopharmacology 1991, 34:49-59 (abstract only). https://pubmed.ncbi.nlm.nih.gov/1753787/

67. Pereira J. Juniperus sabina, savin, from The Elements of Materia Medica and Therapeutics, nineteenth century, transcribed on Henriette's Herbal (read). https://henriettes-herb.com/eclectic/pereira/juniperus-sabi.html

68. Pages N, Fournier G, Chamorro G, et al. Teratological evaluation of Juniperus sabina essential oil in mice. Planta Medica 1989, 55:144-146 (abstract only). https://pubmed.ncbi.nlm.nih.gov/2748731/

69. The Dispensatory of the United States of America, 1918 edition [VERIFY editors]. Gossypium, transcribed on Henriette's Herbal (read). https://www.henriettes-herb.com/eclectic/usdisp/gossypium.html

70. Perrin LM. Resisting reproduction: reconsidering slave contraception in the Old South. Journal of American Studies 2001, 35(2):255-274 [VERIFY pages] (abstract only). https://resolve.cambridge.org/core/journals/journal-of-american-studies/article/abs/resisting-reproduction-reconsidering-slave-contraception-in-the-old-south/351F79694FEF1A7FB5F33DE3DCB928D2

71. Dannenberg AL, Dorfman SF, Johnson J. Use of quinine for self-induced abortion. Southern Medical Journal 1983, 76:846-849 (abstract only). https://pubmed.ncbi.nlm.nih.gov/6867792/

72. Willner K, Heinrichs L. Subacute fatal quinine poisoning after attempted abortion. Archiv für Toxikologie 1961, 19:224-228 (title only, in German). https://pubmed.ncbi.nlm.nih.gov/14007281/

73. International Programme on Chemical Safety. Quinine, poisons information monograph PIM 464, undated (search summary only). https://inchem.org/documents/pims/pharm/pim464.htm

74. Hall A, Ransom WB. Plumbism from the ingestion of diachylon as an abortifacient. BMJ 1906, 1:428-430 (title only). https://pubmed.ncbi.nlm.nih.gov/20762540/

75. The Victorian Web. Maternity in Victorian England, section 4 (secondary summary drawing on McLaren). https://victorianweb.org/victorian/science/maternity/uvic/4.html

76. Riddle JM. Eve's Herbs: A History of Contraception and Abortion in the West. Harvard University Press 1997 (not read, known through secondary summaries and MA-08).

77. van de Walle E. Flowers and fruits: two thousand years of menstrual regulation. Journal of Interdisciplinary History 1997, 28(2):183-203 (not read, known through MA-08, pages [VERIFY]).

78. Lupin Pharmaceuticals. Quinine sulfate 324 mg capsules, US prescribing information, overdosage section, via Medthority (search summary only). https://www.medthority.com/fda/q/quinine-sulfate/quinine-sulfate-quinine-sulfate-324-mg1-lupin-pharmaceuticals-inc