MED 544 B: Clinical Architecture of Labour and Birth

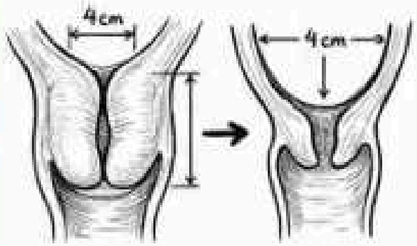
¶3.1



Stage 1

Opening of cervix (0 → 10 cm)

- Early Latent Phase
- Active Phase

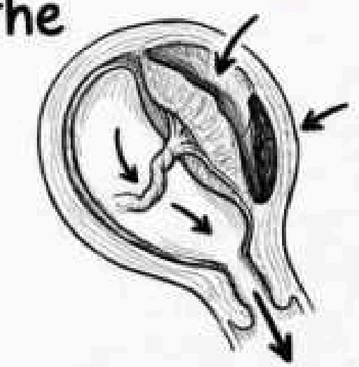


Stage 2

Full dilation to the birth of the baby.

Stage 3

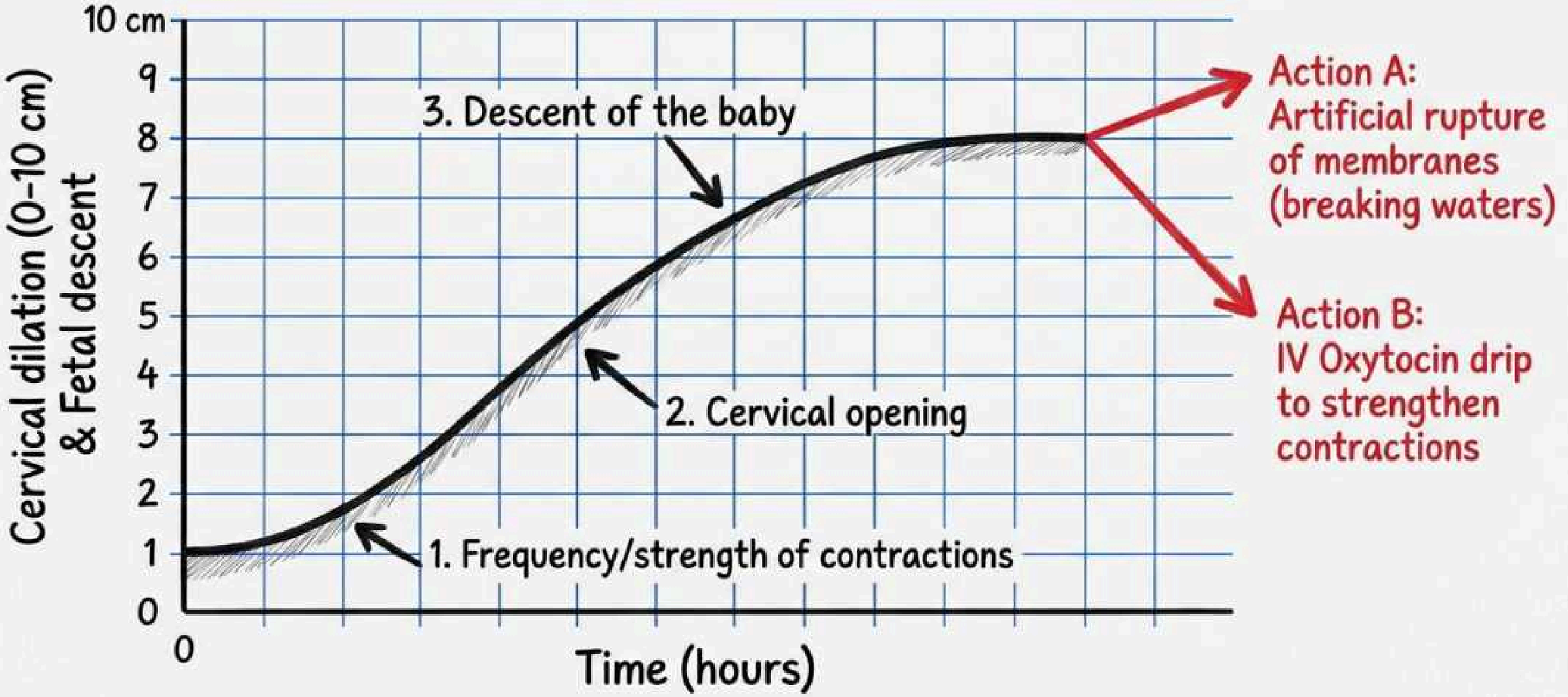
Delivery of the placenta.



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¶ 3.2

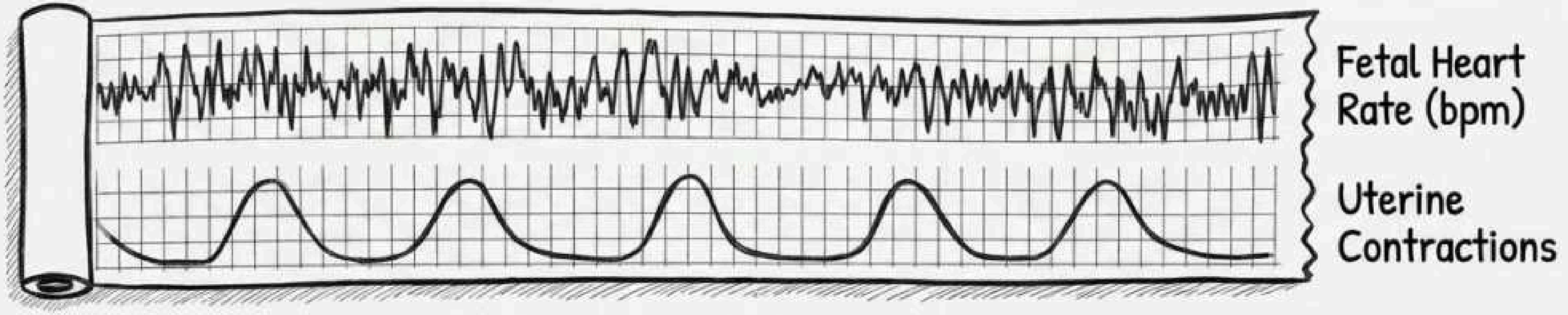
Monitoring Progress: The Partograph



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¶ 3.3

Fetal Wellbeing & Cardiotocography (CTG)



Intermittent	Continuous (CTG)
Handheld device (low-risk standard).	Records HR alongside contractions.
	Recommended for Higher-Risk Labours Only.

The CTG Trade-off: High sensitivity to distress → Difficult interpretation → ↑ False Positives → ↑ Potentially Unnecessary Interventions

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Pain Relief Modalities

¶ 3.4

Intervention	Efficacy Level	Impact on Labour Duration
Support & Breathing	Mild	None
Water Immersion	Moderate	None
Gas & Air ($N_2O + O_2$)	Moderate	None
Injected Opioids	High	Possible slowing
Epidural Anaesthesia	Highest	Alters 2nd Stage

The Epidural Equation

Epidural = Most Effective Analgesia

Impact = ↑ 2nd Stage Duration + Slight ↑ Assisted Birth Risk

✱ CRUCIAL: Does NOT ↑ Caesarean section rate.

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Protocols for Induction of Labour

¶ 3.5

Indications

- Time ($t > 41$ weeks)
- Pre-labour rupture of membranes
- Maternal/Fetal complications (e.g., Pre-eclampsia)

1. Cervical softening (Prostaglandins or Balloon catheter)
2. Breaking waters
3. Oxytocin IV drip

Clinical Trial Spotlight (ARRIVE Trial, 2018)

(First-time mothers $\wedge$ Low-risk)

$+$

Induction at 39 weeks

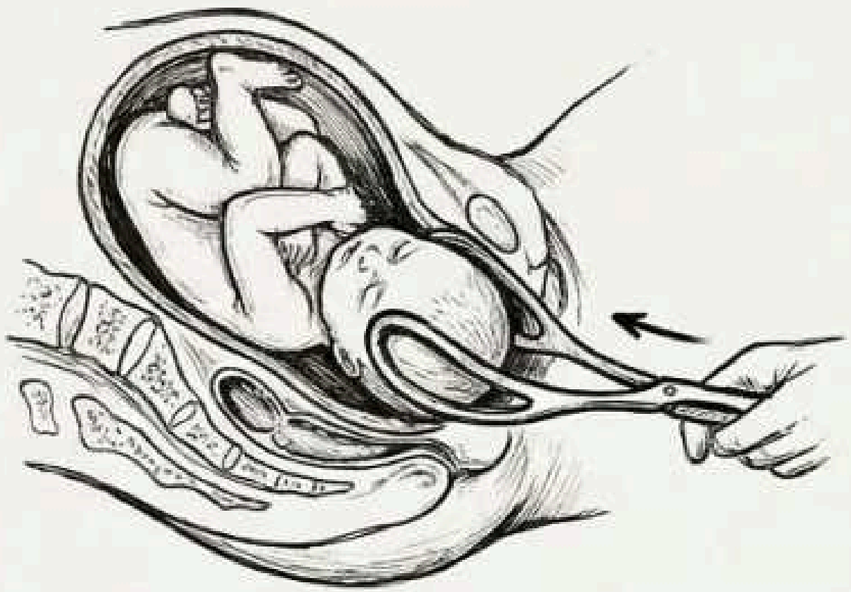
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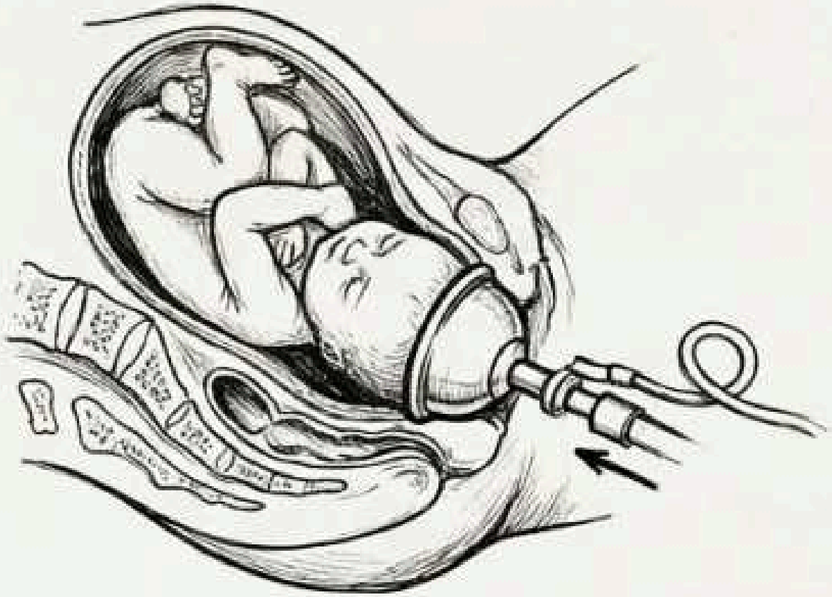
$\uparrow$ Caesarean Section Risk

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Assisted Vaginal Birth

¶ 3.6



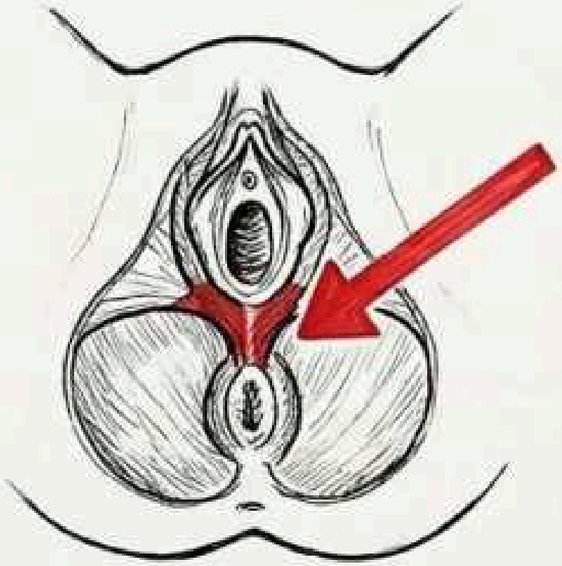


Indications

Delay in 2nd stage V Fetal concern

Strict Prerequisites

- ☑ Cervix = 10cm (fully open)
- ☑ Fetal head station = Low



Tears between vagina and anus are common.

Mandate: Meticulous surgical repair of anal muscles is required to prevent long-term incontinence complications.

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Caesarean Section: Indications & Global Thresholds

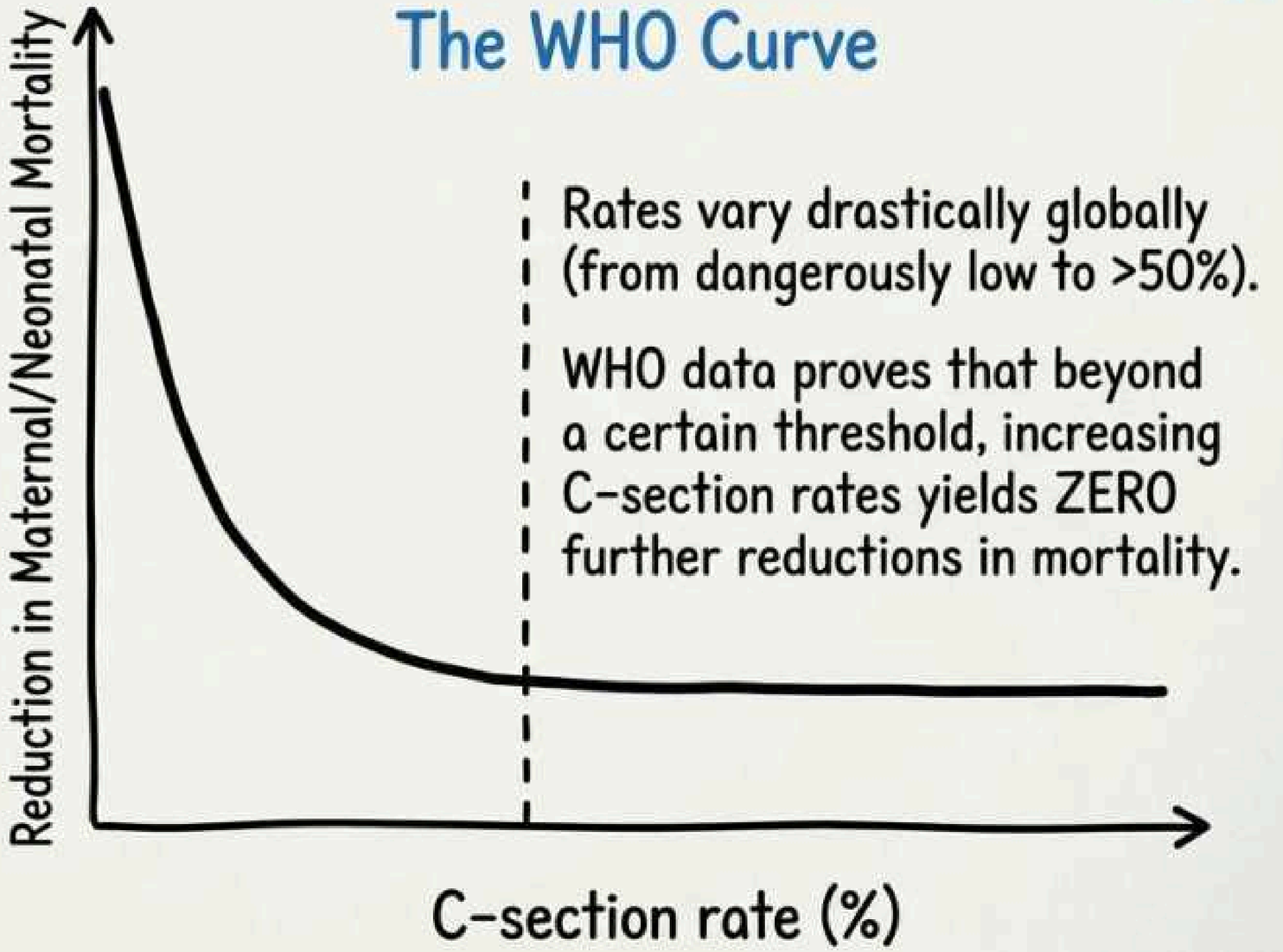
¶ 3.7

Indications

Unsafe/failed vaginal birth

- Placenta praevia
- Difficult fetal position
- Severe fetal distress

The WHO Curve



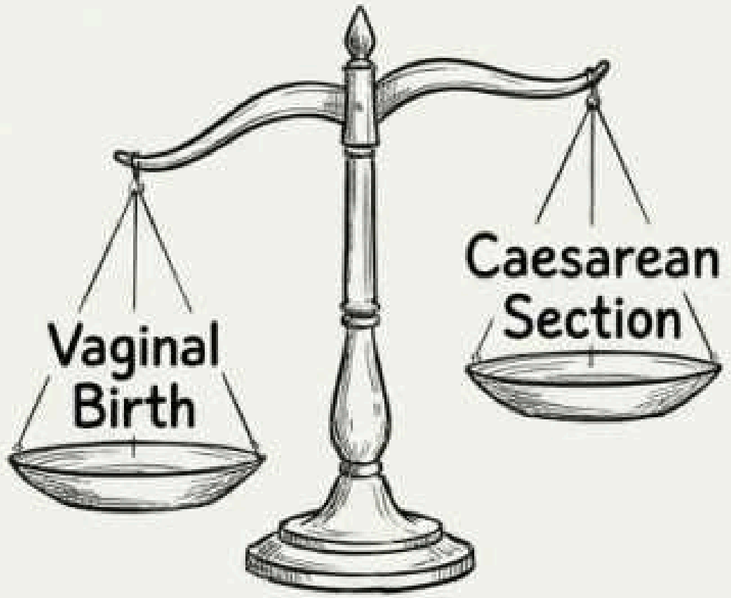
Rates vary drastically globally (from dangerously low to >50%).

WHO data proves that beyond a certain threshold, increasing C-section rates yields ZERO further reductions in mortality.

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Caesarean Section: Safety Profile & Relative Risks

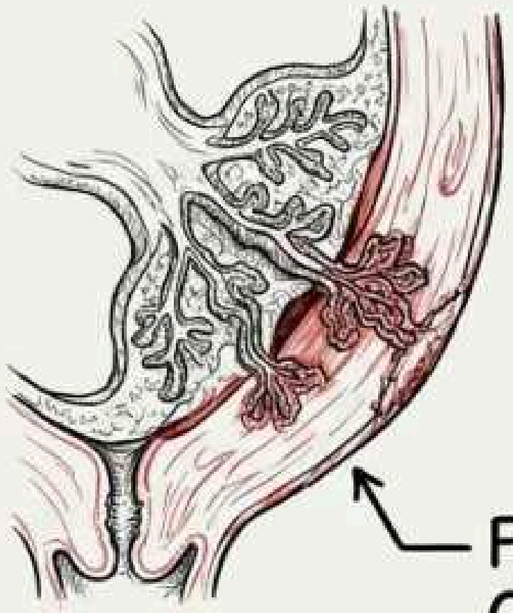
¶ 3.8



Base Assessment:
C-Section is generally safe, but but alters the risk profile.

Elevated Relative Risks (Δ Risk)

- ↑ Infection
- ↑ Bleeding
- ↑ Blood clots



Future Pregnancy Complications:
Abnormally invasive placenta.

VBAC (Vaginal Birth After Caesarean)

Many women with one prior C-section can safely attempt vaginal birth in subsequent pregnancies.

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Obstetric Emergencies: Rapid Response

¶ 3.9

1 Shoulder Dystocia

Fetal shoulder impacted post-head delivery.

→ Requires specific physical manoeuvres.



2 Cord Prolapse

Umbilical cord slips below fetus.

→ Mandates immediate Caesarean section.

3 Eclampsia & Maternal Collapse

Severe bleeding/seizures.

→ Activation of strict, structured medical protocols.

4

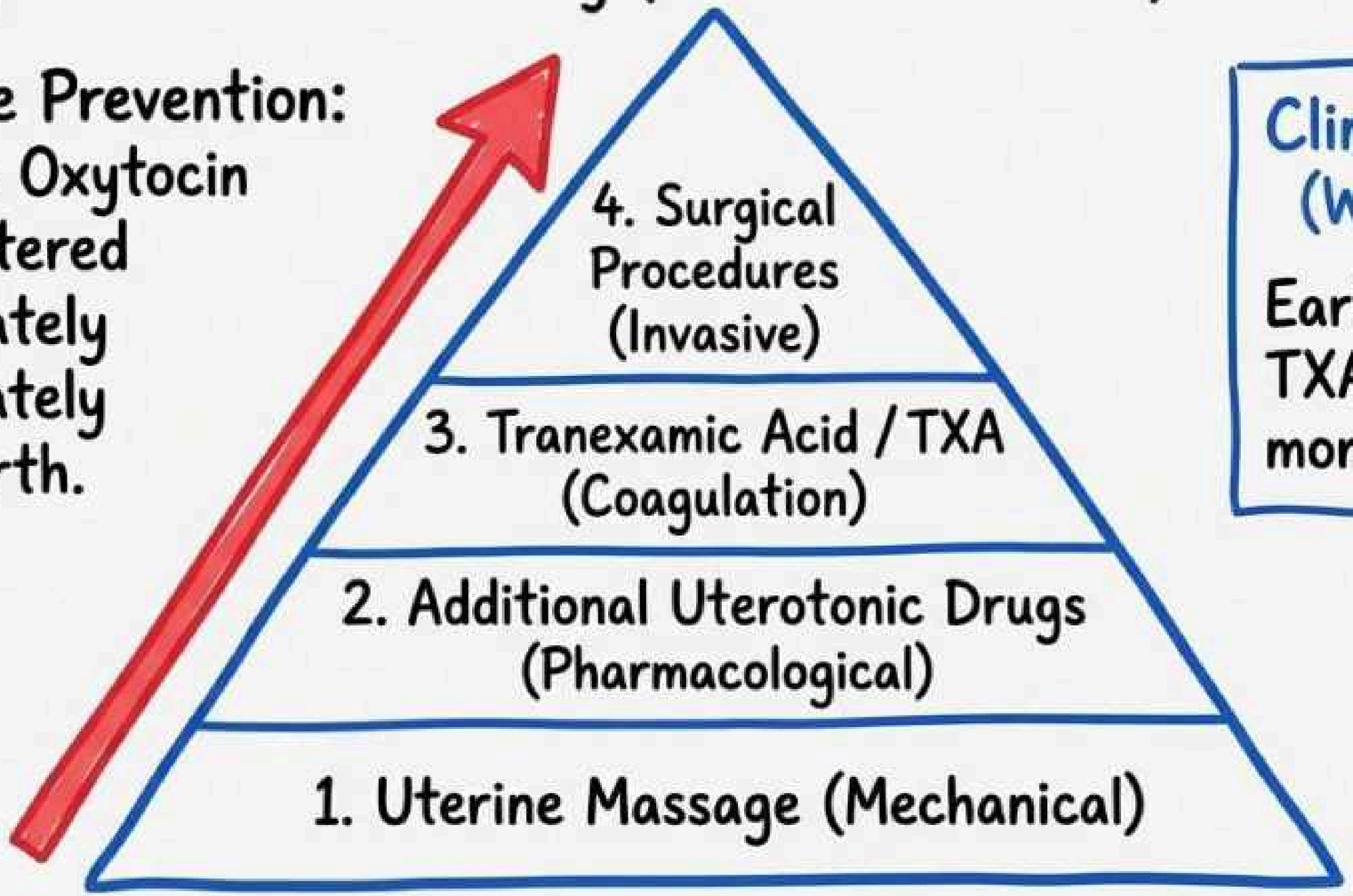
Rapid Coordinated Teamwork + Regular Clinical Drills = Improved Survival Outcomes

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Postpartum Haemorrhage (PPH) Escalation

¶ 3.10

- **Core Pathology:** Leading cause of maternal death worldwide. Primary cause = Uterine atony (failure to contract).
- **Baseline Prevention:** Routine Oxytocin administered immediately immediately post-birth.



Clinical Trial Spotlight (WOMAN Trial, 2017)

Early administration of TXA drastically ↓ mortality from bleeding.

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The Imperative of Respectful Maternity Care

¶ 3.11

Respectful care is a fundamental human right.

1. Treated with dignity.

2. Provided with transparent information.



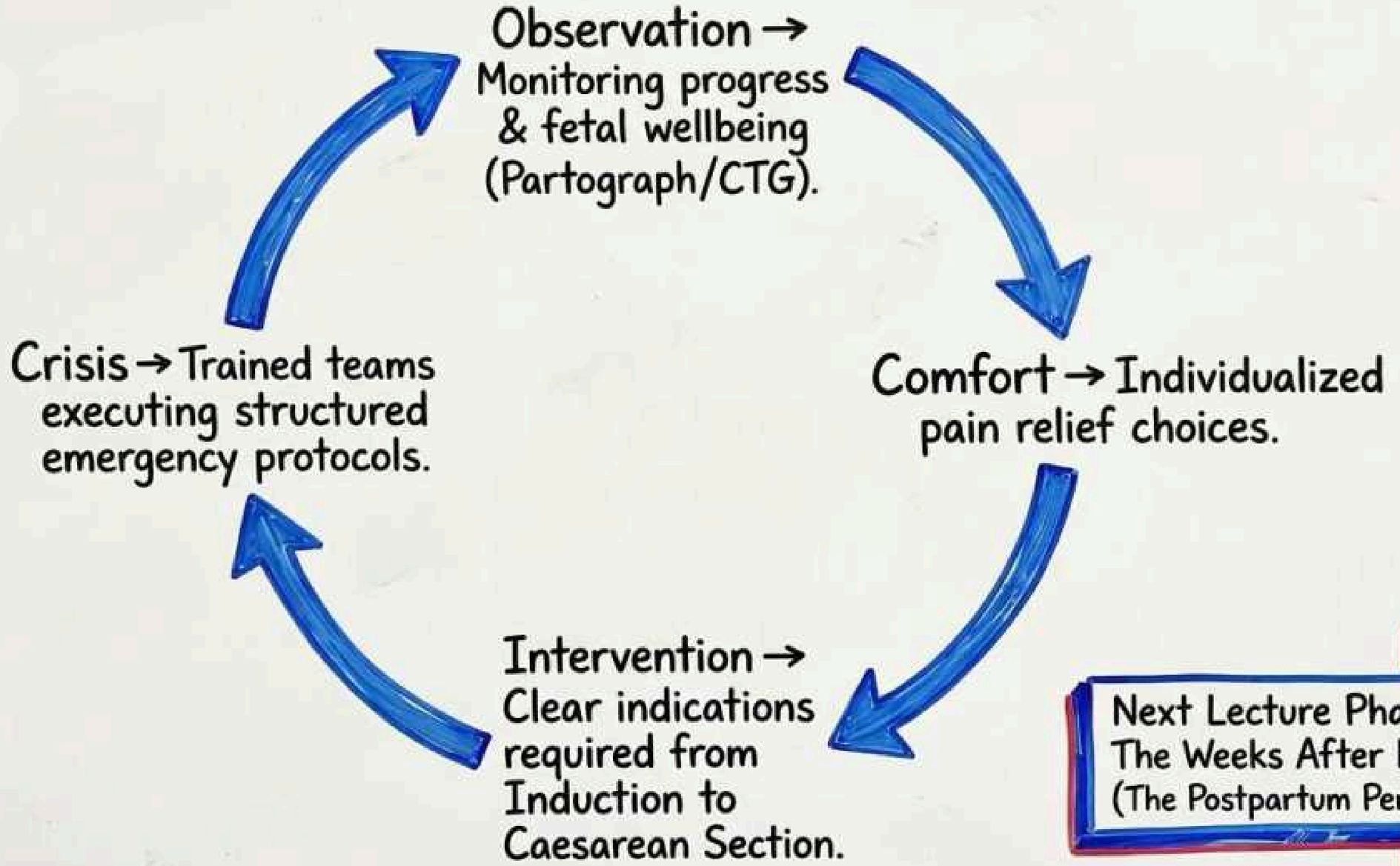
3. Actively involved in all clinical decisions.

Clinical Impact: Global reports confirm that poor treatment causes lasting psychological effects. The lifelong experience of birth is heavily shaped by the quality of humanistic interaction, not just clinical outcomes.

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Synthesis: The Clinical Architecture of Birth

¶ 3.12



Next Lecture Phase: The Weeks After Birth (The Postpartum Period).

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