RESEARCH PAPER

Comparative Study on Knowledge and Practice of Active Management of Third Stage Labour Among Health Care Providers of Selected Rural and Urban Health Centers

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Abstract
Postpartum Hemorrhage (PPH) remains the leading single cause of maternal mortality globally, accounting for approximately 27% to 30% of all maternal deaths annually. The vast majority of these fatalities occur within the first 24 hours post-delivery due to uterine atony during the third stage of labor. Active Management of the Third Stage of Labour (AMTSL) is an evidence-based clinical intervention package recommended by the World Health Organization (WHO), the International Federation of Gynecology and Obstetrics (FIGO), and the International Confederation of Midwives (ICM) to dramatically reduce PPH incidence by up to 60%. Despite explicit global clinical guidelines, significant disparities exist in both theoretical knowledge and actual clinical practices regarding AMTSL between healthcare providers operating in rural versus urban primary and secondary healthcare centers.
This comprehensive review synthesizes contemporary literature evaluating the comparative knowledge, clinical practice adherence, infrastructural constraints, and training determinants among obstetric care providers (midwives, nurses, clinical officers, and general physicians) across rural and urban healthcare facilities. Existing evidence indicates that while health care providers in urban facilities generally demonstrate higher composite knowledge scores and better protocol compliance, providers in rural centers face severe structural barriers—including disrupted cold-chain storage for parenteral oxytocin, persistent staffing shortages, lack of periodic in-service simulation training, and erratic medicine supplies. Conversely, urban practitioners frequently encounter high delivery workloads that lead to procedural shortcuts, such as premature umbilical cord clamping or inappropriate timing of uterotonic administration. Addressing these urban-rural health disparities requires targeted policy reform, institutionalized continuous professional development, decentralization of cold-chain infrastructure (e.g., heat-stable carbetocin adoption), and routine clinical auditing across all tiers of reproductive healthcare.

Keywords: Active Management of Third Stage Labour (AMTSL), Postpartum Hemorrhage (PPH), Uterine Atony, Maternal Mortality, Health Care Providers, Rural vs. Urban Healthcare Disparities, Oxytocin, Controlled Cord Traction.
How to cite this article: K. Janaki1 Kiranvir2* Ritika Janet Singh3 Neha Sethi5 Hari Singh Mali6. Comparative Study on Knowledge and Practice of Active Management of Third Stage Labour Among Health Care Providers of Selected Rural and Urban Health Centers. Int J Drug Deliv Technol. 2026;16(78s):671-679. DOI: 10.25258/ijddt.16.78s.78.

Introduction & Background

Overview of Maternal Mortality and Postpartum Hemorrhage

Maternal mortality remains a major global public health challenge, particularly in low- and middle-income countries (LMICs) where over 94% of all maternal deaths occur (WHO et al., 2019). The third stage of labor—defined as the period from the complete expulsion of the fetus to the complete delivery of the placenta and fetal membranes—is the shortest yet most hazardous phase of childbirth. Primary Postpartum Hemorrhage (PPH), defined as a blood loss of $\geq$ *500* mLwithin 24 hours following vaginal delivery or $\geq$ *1000* mLfollowing a Cesarean section, accounts for approximately 14 million cases annually and leads to over 70,000 deaths worldwide each year (Gelaw et al., 2023).

The primary etiology of early PPH is uterine atony, wherein the myometrium fails to contract effectively after placental separation, preventing the mechanical compression of open spiral arteries at the placental implantation site (Molla et al., 2021). Other causes are clinically summarized by the "4 Ts" framework: **Tone** (uterine atony), **Tissue** (retained placental fragments or blood clots), **Trauma** (genital tract lacerations or uterine rupture), and **Thrombin** (coagulopathies). Because uterine atony accounts for more than 70% to 80% of all primary PPH incidents, preventive strategies directed specifically at guaranteeing post-delivery uterine contraction are paramount to reducing maternal morbidity and mortality (Gülmezoglu et al., 2009).

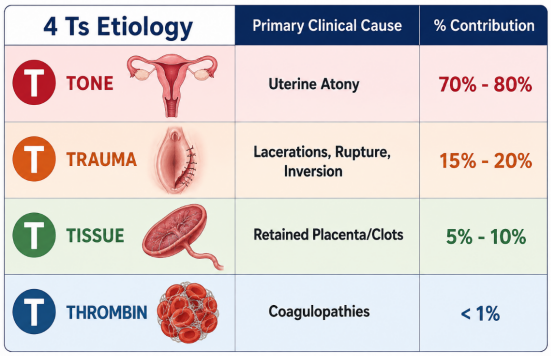

Figure 1: 4 Ts Etiology of Postpartum Haemorrhage (PPH)

Evolution and Definition of Active Management of Third Stage Labour (AMTSL)

Historically, the third stage of labor was managed expectantly (physiologically), relying solely on endogenous maternal oxytocin release, spontaneous placental separation, and expulsion through maternal pushing effort without medical or pharmacological intervention. However, landmark randomized clinical trials conducted during the late 1980s and 1990s—notably the Bristol and Hinchingbrooke trials—demonstrated that active intervention by skilled birth attendants significantly reduced blood loss, shortened the duration of the third stage, reduced the incidence of postpartum anemia, and minimized the requirement for therapeutic uterotonics or blood transfusions (Prendiville et al., 1988; Begley et al., 2019).

In response to these findings, joint recommendations by FIGO, ICM, and the WHO standardized the definition of AMTSL. Originally, AMTSL comprised three core components:

1. Immediate administration of a prophylactic uterotonic drug (preferably oxytocin) within 1 minute of the delivery of the infant.
2. Controlled Cord Traction (CCT) to facilitate placental delivery during a uterine contraction while applying counter-pressure to the uterine fundus.
3. Continuous uterine massage immediately following placental expulsion, followed by abdominal palpation every 15 minutes for the first 2 hours post-partum.

In updated WHO guidelines, while uterotonic administration remains the non-negotiable core intervention for PPH prevention, CCT is classified as optional in settings where skilled attendants are unavailable or where birth attendants lack formal training, and routine uterine massage prior to placental delivery is explicitly discouraged (WHO et al., 2012).

Clinical Physiology of the Third Stage of Labor

Understanding the transition from fetal expulsion to placental detachment requires an analysis of uterine mechanics and hematologic physiology:

Uterine Muscle Contraction
⟶ Shearing Force at Decidual Layer
⟶ Placental Separation
⟶ Vessel Compression ("Living Ligatures")

Following the birth of the baby, the rapid reduction in intra-uterine volume causes a massive decrease in the internal surface area of the uterine wall. Because the placenta is a non-contractile organ, it cannot adapt to this sudden reduction in retroplacental attachment area. The resulting mechanical mismatch generates shearing forces across the decidua basalis, causing the placenta to detach from the uterine wall. Blood escapes into the retroplacental space, creating a retroplacental hematoma that further accelerates separation.

As the myometrial smooth muscle fibers contract and retract, they intertwine around the penetrating spiral arteries like figure-eight loops. These crisscrossing myometrial muscle fibers act as internal mechanical ligatures—frequently termed "living ligatures"—physically constricting blood vessels that supply the placental site (Gelaw et al., 2023). When uterine atony occurs, these living ligatures fail to constrict, resulting in rapid arterial blood loss that can exceed 500 mL per minute from the maternal cardiovascular system.

Core Components of AMTSL

AMTSL comprises three clinical steps designed to ensure maximum uterine contraction, safe placental extraction, and rapid post-delivery monitoring.

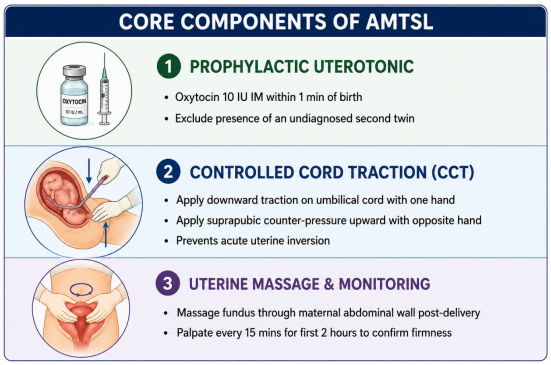

Figure 2: Core Components of Active Management of the Third Stage of Labour (AMTSL)

Prophylactic Uterotonic Administration

The administration of a prophylactic uterotonic is the single most critical component of AMTSL. Standard guidelines mandate the administration of 10 International Units (IU) of oxytocin intramuscularly (IM) within 1 minute of the baby's delivery, immediately after ruling out the presence of an undiagnosed second twin via abdominal palpation (Molla et al., 2021).

- **Oxytocin:** The gold standard uterotonic. It stimulates synthetic receptors on the myometrium, producing rhythmic and powerful uterine contractions. It has a rapid onset of action (1–2 minutes after IM injection) with minimal side effects when

administered IM. However, oxytocin is heat-labile and requires strict cold-chain maintenance at temperatures between 2°C and 8°C.

- **Ergometrine / Methylergometrine:** Potent smooth muscle constrictors that induce tonic uterine contractions. Though effective, they cause pronounced systemic arterial vasoconstriction, leading to severe transient hypertension, severe nausea, and vomiting. They are strictly contraindicated in women with pre-eclampsia, eclampsia, or cardiovascular disease.
- **Syntometrine:** A combination of oxytocin (5 IU) and ergometrine (0.5 mg) offering both rapid onset and sustained duration, but carrying the systemic cardiovascular risks of ergometrine.
- **Misoprostol:** A synthetic prostaglandin E1 analog available in oral or sublingual tablet form (400–600 mcg). While slightly less effective than parenteral oxytocin in preventing PPH, misoprostol is heat-stable and requires no syringes or needles, making it a critical alternative in low-resource rural settings lacking cold-chain infrastructure.
- **Heat-Stable Carbetocin:** A long-acting synthetic analog of human oxytocin that does not require refrigeration. Clinical trials demonstrate non-inferiority to standard oxytocin in preventing PPH following vaginal birth while maintaining stable shelf-life at high ambient temperatures up to 30°C for 3 years (Widmer et al., 2018).

Drug	Route / Dose	Onset	Half-Life	Storage Req.	Contraindications
Oxytocin	10 IU IM (within 1 min of birth) / 5–10 IU IV slow (if needed)	1–3 min (IV: within 30–60 sec)	3–5 min	2–8 °C (Refrigerate)	• Known hypersensitivity • Severe cardiac disease • Uncorrected hyponatremia
Methylergo-metrine	0.2 mg IM / 0.2 mg IV/slow (if needed)	2–5 min	2–3 hr	15–30 °C (Room temp.)	• Hypertension • Preeclampsia / Eclampsia • Ischemic heart disease • Peripheral vascular disease
Carboprost 15-Methyl $PGF_{2\alpha}$	250 mcg IM (repeat every 15–90 min; max 2 mg)	1–3 min	20–40 min	2–8 °C (Refrigerate)	• Asthma • Severe renal, hepatic or cardiac disease
Misoprostol	600–1000 mcg Sublingual / Buccal / Rectal	15–20 min (SL/Buccal) 30–60 min (Rectal)	20–40 min	15–30 °C (Room temp.)	• Known hypersensitivity • Caution: Asthma (not absolute)
Dinoprostone ($PGF_{2\alpha}$)	0.5 mg (Gel) Intra-muscular / Cervical (As per indication)	5–10 min	30–60 min	2–8 °C (Refrigerate)	• Asthma • Glaucoma • Hypersensitivity

Figure 3: Comparison of Uterotonic Drugs Used in the Management of Postpartum Haemorrhage (PPH)

Delayed Cord Clamping and Controlled Cord Traction (CCT)

Current recommendations advocate for delayed cord clamping (DCC), executed between 1 and 3 minutes after birth (or after cord pulsations cease), as it transfers approximately 80 to 100 mL of additional blood to the term infant, significantly reducing neonatal anemia and iron deficiency during early infancy.

Controlled Cord Traction (CCT) is a skilled technique designed to assist in the prompt removal of the separated placenta:

1. Following cord clamping and cutting, the midwife places one hand on the lower uterine segment just above the pubic symphysis to exert upward counter-pressure on the uterus.
2. The other hand firmly grasps the umbilical cord (using a clamp placed close to the perineum) and applies steady, continuous, downward-and-backward traction only during a firm uterine contraction.
3. Counter-traction is essential to prevent **acute uterine inversion**—a life-threatening obstetric emergency characterized by the turning inside-out of the uterine fundus into the vagina or past the introitus.

Immediate Post-Placental Uterine Massage & Monitoring

Immediately following the delivery of the placenta and membranes, the clinician must perform fundal massage through the maternal abdominal wall until the uterus is firm and well-contracted. Massage mobilizes accumulated blood clots and stimulates endogenous oxytocin release via mechanical reflex pathways.

Additionally, guidelines require close clinical surveillance during the fourth stage of labor (the first 2 hours post-partum):

- Uterine tone assessment via abdominal palpation every 15 minutes for the first hour and every 30 minutes for the second hour.
- Systematic inspection of the delivered placenta, umbilical cord, and fetal membranes (chorion and amnion) to verify completeness and rule out retained cotyledons or succenturiate lobes.
- Visual examination of the perineum, vagina, and cervix under adequate illumination to identify structural tears or expanding hematomas requiring surgical repair.

Comparative Knowledge Assessment: Rural vs. Urban Healthcare Providers

Knowledge levels regarding AMTSL protocols vary considerably across healthcare delivery tiers and geographic settings.

Knowledge Domain	Rural Providers	Urban Providers
Oxytocin First-Line Choice	78.4%	94.2%
Timing of Uterotonic (<1 min)	42.1%	71.5%
Rule Out 2nd Twin Rule	65.0%	88.9%
Purpose of Counter-Traction	38.2%	69.4%
Storage Requirements	51.3%	83.1%
Overall Composite Competency	48.7%	76.8%

Figure 4: Knowledge and Competency in AMTSL Among Rural and Urban Healthcare Providers

Theoretical Competencies and Guideline Awareness

Numerous institutional cross-sectional studies across sub-Saharan Africa, South Asia, and Latin America highlight persistent gaps in healthcare providers' theoretical understanding of AMTSL protocols:

- **Urban Providers:** Midwives, resident obstetricians, and clinical nurses working in urban tertiary and district referral hospitals display higher baseline theoretical knowledge. A majority of urban health personnel correctly identify oxytocin as the first-line uterotonic agent, describe the precise dose (10 IU IM), and recognize the core objective of AMTSL as preventing uterine atony (Gelaw et al., 2023).
- **Rural Providers:** Staff in rural primary health centers, health posts, and community clinics demonstrate significantly lower composite knowledge scores. While most providers recognize that an injection should be given post-birth, a substantial proportion fail to state the precise time window (within 1 minute) or recommend outdated/incorrect practices, such as administering oxytocin before the baby's delivery or utilizing oral ergometrine routinely regardless of blood pressure status (Molla et al., 2021).

Determinants of Knowledge Disparities

The structural drivers behind the rural-urban knowledge divide include:

1. **Access to Continuing Medical Education (CME):** Urban clinicians participate more frequently in structured workshops, emergency obstetric simulation trainings (e.g., Helping Mothers Survive Bleeding After Birth), and academic ward rounds. Rural workers rarely receive refreshed in-service training due to travel constraints, budget shortages, and staffing shortages that prevent leave.
2. **Availability of Updated Standard Operating Procedures (SOPs):** Wall-mounted visual aids, printed WHO algorithms, and standardized AMTSL flowcharts are widely posted in urban delivery suites but are routinely absent in rural labor rooms.
3. **Professional Cadre Mix:** Urban facilities concentrate specialized personnel, including obstetricians, certified nurse-midwives, and postgraduate trainees. Rural primary health centers are disproportionately staffed by community health workers, auxiliary nurse-midwives (ANMs), or general nurses who received minimal practical exposure to active third-stage management during basic pre-service education.

Comparative Practice Assessment: Rural vs. Urban Healthcare Providers

Theoretical knowledge does not always translate into correct clinical practice. Observations of deliveries reveal significant discrepancies between self-reported knowledge and actual performance during birth management.

Clinical Step Performed	Rural Centers	Urban Centers
Uterotonic Admin within 1 min	32.5%	64.2%
Palpation for 2nd Twin Prior	58.1%	82.0%
Correct CCT Technique Executed	21.4%	56.8%
Post-Placental Uterine Massage	44.0%	68.5%
Placental Inspection for Totality	39.8%	73.1%
ALL 3 Components Correctly Done	16.7%	38.4%

Figure 5: Clinical Performance of AMTSL Components in Rural and Urban Healthcare Centres

Adherence to Standard Operating Protocols

Field observations reveal that full compliance with all three core components of AMTSL remains low across both sectors, but is strikingly worse in rural health facilities:

- **Timing and Dose of Uterotonics:** In rural centers, oxytocin is frequently administered late—often 5 to 15 minutes after birth or after placental separation has already commenced. In some rural facilities, providers withhold oxytocin until the placenta is delivered due to fear of trapped placenta, indicating a fundamental misunderstanding of oxytocin physiology (Molla et al., 2021). In urban settings, timing is generally better, but rapid patient turnover leads to errors in recording dosage or delegate administration to unqualified student interns without direct supervision.
- **Controlled Cord Traction Execution:** In rural health posts, incorrect CCT execution is common. Providers often perform cord traction without applying upward counter-traction on the lower uterine segment, markedly raising the risk of uterine inversion or umbilical cord avulsion (snapping of the cord). Conversely, urban practitioners sometimes perform aggressive cord traction before signs of uterine contraction are present, increasing the rate of manual removal of placenta due to partial detachment.
- **Uterine Massage and Post-partum**

Monitoring: Follow-up uterine monitoring during the fourth stage of labor is one of the most frequently neglected clinical steps. In urban facilities, overcrowding and high patient-to-midwife ratios mean that once a woman is transferred out of the delivery bay to a postpartum ward, routine fundal palpation every 15 minutes is rarely sustained. In rural facilities, while patient volume is lower, lack of supervision and lack of structured postpartum monitoring charts leads to early neglect of maternal monitoring.

Cold Chain Integrity, Medication Availability, and Infrastructure Limitations

A significant driver of rural-urban practice divergence is drug quality and supply chain integrity.

Resource Domain	Rural Centers	Urban Centers
Continuous Electricity Supply	31.2%	89.5%
Dedicated 2°C - 8°C Refrigerator	42.0%	96.1%
Unbroken Cold Chain Verification	18.5%	78.4%
Potent Oxytocin Assayed at Point	28.0%	84.2%
Syringes / Needles Always Ready	64.0%	98.0%

Figure 6: Availability of Essential Resources for AMTSL in Rural and Urban Healthcare Centres

Oxytocin Bioactivity Degradation: Parenteral oxytocin rapidly degrades when exposed to temperatures exceeding 25°C. Rural primary healthcare facilities frequently suffer from unreliable electrical grids, absence of backup generators, and defective cold-chain refrigerators. Studies evaluating oxytocin potency in sub-Saharan Africa and South Asia have shown that up to 50%–80% of oxytocin samples tested from rural clinics lack the required active pharmaceutical ingredient (API) potency due to thermal degradation (Torloni et al., 2016). As a result, even when a rural provider correctly administers oxytocin, the therapeutic effect is compromised.

- **Stockouts and Supplies:** Rural facilities suffer higher rates of oxytocin stockouts, forcing clinicians to rely on oral misoprostol or, in severe cases, expectant management. Urban centers generally maintain stable medication procurement channels, although stockouts of sterile syringes or personal protective equipment (PPE) still periodically disrupt care delivery.

Human Resource Allocation, Workload, and Provider Burnout

- **Urban Dynamics:** Urban facilities face extreme overcrowding. A single midwife in a busy urban tertiary hospital may oversee 5 to 10 deliveries per shift. Under these high-volume conditions, burnout leads to procedural shortcuts—such as rapid umbilical cord clamping immediately after birth, omitting placental completeness inspections, or skipping fundal massage—to clear beds for incoming laboring women.
- **Rural Dynamics:** Rural facilities face severe understaffing, often leaving a single auxiliary nurse or midwife on duty for multi-day stretches without clinical back-up. Solitary providers must perform resuscitation of the newborn while simultaneously managing the third stage of labor for the mother. In such dual-emergency situations, the newborn is almost always prioritized, leading to complete neglect of AMTSL protocols for the mother during the critical first 10 minutes post-birth.

Systematic Risk Factors & Implementation Barriers

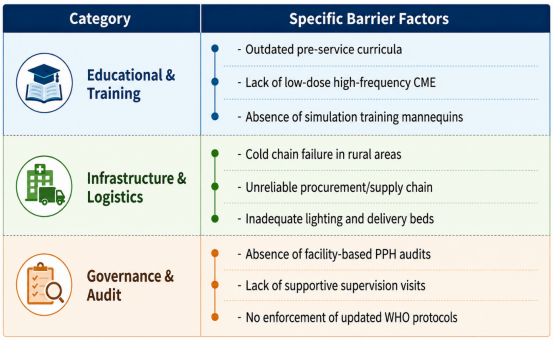

Figure 7: Barriers to Effective AMTSL Implementation in Low-Resource Healthcare Settings

Educational Background and In-Service Training Gaps

Pre-service education programs across many training institutions have failed to rapidly integrate updated international guidelines. Many healthcare workers are trained using obsolete textbooks that advocate immediate cord clamping and routine manual uterine massage before placental detachment. Furthermore, effective skill retention requires hands-on simulation training. While urban medical institutions utilize specialized birth simulators (e.g., MamaNatalie), rural providers rarely have access to practical refresher modules.

Institutional Support, Supervision, and Audit Mechanisms

Clinical governance mechanisms differ markedly between rural and urban centers:

- **Clinical Audits:** Urban hospitals frequently hold monthly perinatal and maternal mortality review meetings where cases of severe PPH are analyzed to identify systemic or procedural failures. This creates institutional accountability.

- **Supportive Supervision:** Rural primary care centers operate in relative isolation. Supervisory visits from district health officers are sporadic and typically focus on administrative metrics rather than clinical skill assessment or bedside mentoring. In the absence of constructive feedback, improper AMTSL practices become normalized among rural staff.

Figures & Visual Illustrative Diagrams

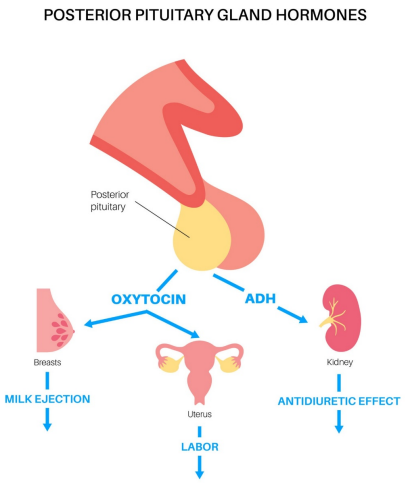

Figure 8: Hormonal Control and Systemic Physiological Pathway of Endogenous vs Exogenous Oxytocin

This anatomical diagram illustrates the neuroendocrine pathway governing oxytocin secretion from the posterior pituitary gland and its downstream targets (uterus during labor and lactating breast tissue).

As shown in Figure 8, oxytocin synthesized in the hypothalamus and released by the posterior pituitary binds directly to oxytocin receptors (OTR) on the myometrium. Prophylactic IM oxytocin (10 IU) rapidly saturates these OTR sites, inducing sustained tonic contraction of the myometrial smooth muscle cells.

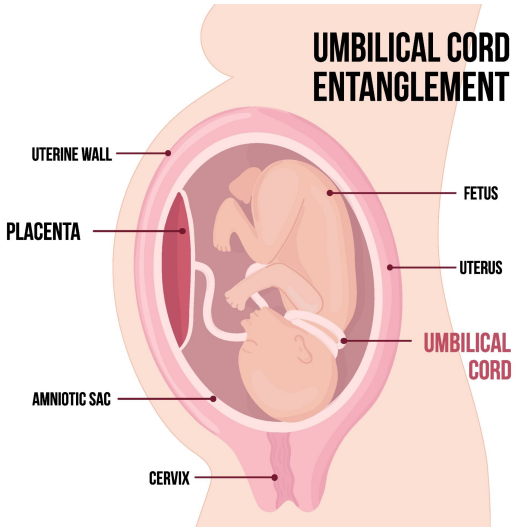

Figure 9: Anatomical Spatial Relationship of Fetus, Placenta, and Uterine Wall Prior to Separation

This diagram depicts the intra-uterine anatomy at full term, illustrating the structural contact interface between the placenta, umbilical cord, and uterine wall before placental detachment occurs in the third stage.

Anatomical layout of uterine wall, placenta, and umbilical cord prior to third stage delivery.

It illustrates the intact retroplacental attachment zone. During the third stage of labor, myometrial contraction reduces the surface area of the uterine wall beneath the non-contractile placenta, causing mechanical detachment across the decidual layer.

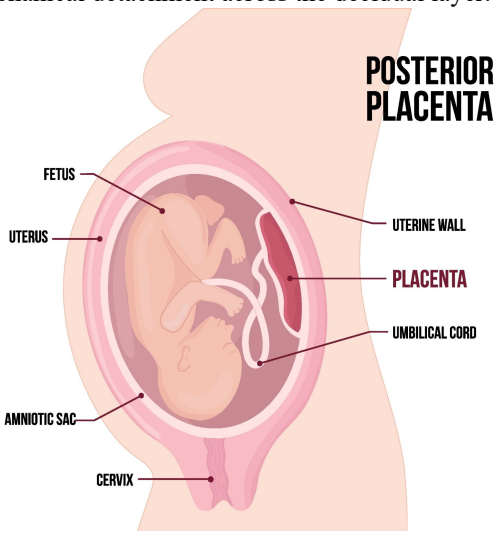

Figure 10: Posterior Placental Implantation and Comparative Anatomical Variants

This anatomical figure illustrates placental position within the uterine cavity, highlighting retroplacental structural anatomy and vascular relationships that dictate manual vs. active removal risks.

Anatomical representation of posterior placental attachment within the uterine cavity.

As depicted in Figure, the spatial orientation of the placenta affects how shearing forces detach the organ. Correct execution of Controlled Cord Traction (CCT) relies on pulling along the natural anatomical axis of the pelvic canal while supporting the fundus.

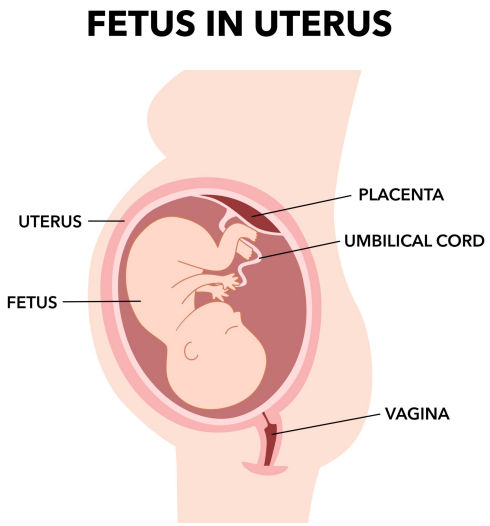

Figure 11: Fundamental Anatomical Structural Anatomy of the Gravid Uterus, Placenta, and Birth Canal

This structural diagram outlines the spatial relationship between the upper uterine segment, lower uterine segment, placenta, umbilical cord, and cervix during childbirth.

Structural diagram of the term gravid uterus showing placental interface and cervical canal.

Figure details the relationship between the upper active contracting segment of the uterus and the lower passive segment. During AMTSL, counter-traction is applied specifically above the pubic symphysis over the lower segment to stabilize the organ while applying gentle cord traction.

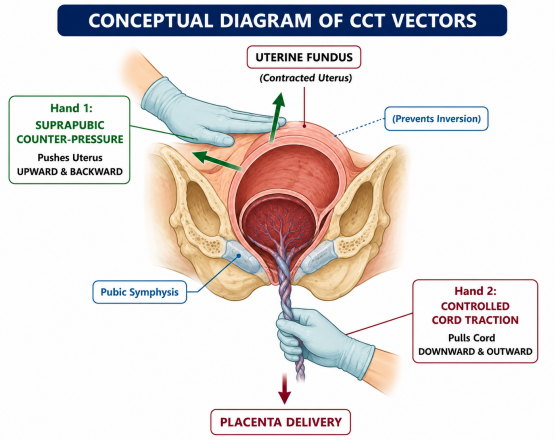

Figure 12: Conceptual Mechanical Diagram of Counter-Traction during Controlled Cord Traction (CCT)

The schematic below provides a structural diagram illustrating the vectors of force applied during Controlled Cord Traction to prevent uterine inversion.

Figure illustrates the force mechanics during Controlled Cord Traction. Upward counter-traction applied to the lower uterine segment stabilizes the fundus, preventing acute uterine inversion as downward traction is applied to the umbilical cord.

Strategies for Systemic Improvement & Global Policy Recommendations

To eliminate disparities in AMTSL knowledge and implementation between rural and urban facilities, healthcare systems must execute multi-level policy interventions:

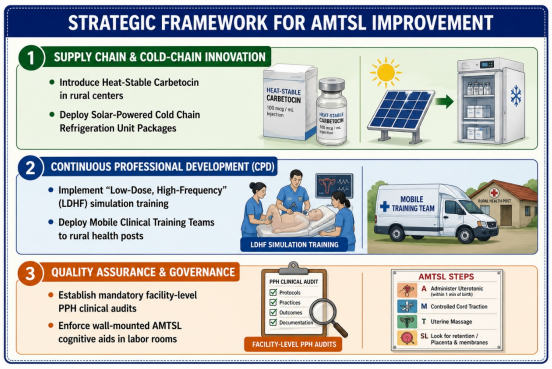

Figure 13: Strategic Framework for AMTSL Improvement

Supply Chain Reform and Heat-Stable Uterotonics

1. **Adoption of Heat-Stable Carbetocin:** National essential medicine lists (EMLs) should prioritize the rollout of heat-stable carbetocin for rural and remote primary healthcare centers where cold-chain integrity cannot be guaranteed. This single intervention bypasses the problem of thermal degradation of oxytocin in off-grid settings (Widmer et al., 2018).
2. **Distribution of Oral Misoprostol:** In peripheral health posts managed by community birth attendants where parenteral injections are unavailable or unauthorized, misoprostol (600 mcg orally) should be made universally available in tamper-evident blister packs.

Innovative Training Modalities: Low-Dose High-Frequency (LDHF) Learning

Traditional multi-day off-site training workshops are costly and pull vital clinical staff away from understaffed rural health centers. Healthcare systems should transition to **Low-Dose High-Frequency (LDHF)** training models:

- Short, 30-to-60-minute practical simulation drills conducted on-site in the delivery room once or twice per month using portable anatomical models (e.g., MamaNatalie).
- Mobile clinical mentorship programs where experienced master trainers from urban referral hospitals periodically visit rural centers to conduct joint clinical rounds and bedside mentoring.

Standardized Visual Cognitive Aids and Clinical Audits

- **Cognitive Aids:** Wall-mounted, color-coded step-by-step algorithms depicting

AMTSL components and early PPH management guidelines must be posted above every delivery table in rural and urban health facilities alike.

- **Facility-Based Audits:** Institutionalize mandatory PPH case reviews and clinical audits. Monitoring metrics should track uterotonic administration timing, cold-chain temperature logs, and postpartum blood loss monitoring documentation.

Conclusion

Active Management of the Third Stage of Labour (AMTSL) is a proven, cost-effective life-saving strategy capable of reducing Postpartum Hemorrhage and maternal mortality worldwide. However, substantial gaps persist in both provider knowledge and actual clinical execution, with rural healthcare facilities facing severe structural disadvantages compared to urban centers. Rural healthcare providers are constrained by broken cold-chain storage networks, lower access to continuing medical education, erratic drug supplies, and isolation from specialist support. Urban providers, while displaying higher theoretical knowledge, are routinely compromised by high delivery workloads, staff burnout, and overcrowded delivery bays that encourage procedural shortcuts.

Bridging this rural-urban health divide requires structural reform: replacing heat-sensitive oxytocin with heat-stable carbetocin in remote health centers, modernizing pre-service and in-service clinical education through low-dose high-frequency simulation drills, enforcing strict cold-chain quality assurance, and establishing supportive supervision and clinical auditing across all health facilities. Ensuring that every laboring woman—regardless of whether she gives birth in a remote rural health post or an urban tertiary hospital—receives standardized, high-quality AMTSL is a core imperative for global maternal health equity.

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