THROUGH THE CORDS
Next-Generation Airway Tools

Preparation for Conversion from Regional to General Anesthesia in Cesarean Delivery

Pain with Cesarean Delivery, Barriers to Pain Control, and a Systems Approach to Conversion Readiness

A clinical review for anesthesiologists, CRNAs, and L&D nursing teams

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Executive Summary

Patient-reported pain during cesarean delivery under neuraxial anesthesia is no longer a quiet clinical problem — it is a public accountability issue. A February 2026 episode of *The New York Times'* podcast *The Daily*, titled "When Anesthesia Fails and the Patient Is Cut Open," reached millions of listeners with the finding that an estimated 100,000 women per year experience significant intraoperative pain during cesarean delivery in the United States. The medical community's response was framed as systematic dismissal.

The clinical reality is more nuanced than the media portrayal — but the numbers are real, the harm is documented, and the questions are coming.

This paper reviews the incidence of pain during cesarean delivery, the intubation risk calculus that may contribute to hesitation about converting to general anesthesia, the guideline-aligned principles governing that conversion, and the operational barriers that delay it. It then proposes a practical *Prepared for Conversion* framework built around the default use of video laryngoscopy, the role of static and dynamic stylets and introducers, multiple-attempt discipline, and team role clarity.

The goal is not to increase general anesthesia rates. It is to ensure that when conversion is indicated, the system is ready — so that intubation hesitancy never becomes a reason to leave a patient in pain.

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1. Pain During Cesarean Delivery: Incidence, Risk Factors, and Consequences

Cesarean delivery is the most common surgery performed in the United States, with approximately 1.2 million cases annually. Most are conducted under neuraxial anesthesia — spinal, epidural, or combined spinal-epidural — allowing the patient to remain awake for the birth.

A recent multicenter, patient-reported outcomes study enrolling approximately 4,000 patients across 15 hospitals in the United States and Canada found that 8% of patients reported significant intraoperative pain, defined as a score of 6 or higher on a 10-point scale (*Anesthesiology* 2025;143:156). Extrapolated nationally, this represents roughly 100,000 women per year experiencing significant pain during cesarean delivery under regional anesthesia.

The risk is not evenly distributed. Pain was technique-dependent: 13% of patients whose surgery relied on a topped-up labor epidural reported significant pain, compared with 4% of patients who received a spinal. This distinction matters because the topped-up epidural scenario is most associated with urgent or emergent cesarean delivery — a patient laboring with an epidural in place whose clinical course deteriorates and requires operative delivery. The highest-risk phenotype for pain coincides with the least controlled clinical situation, compounding provider task load. When urgency is layered on top of a patient in pain after incision, and conversion to general anesthesia is required after the procedure has begun, the result is one of the highest-risk intubation scenarios encountered in the operating room.

The consequences extend well beyond the operating room. Intraoperative pain during cesarean delivery is associated with post-traumatic stress disorder and postpartum depression (*Anesth Analg* 2024;139:1156). It is the leading cause of successful negligence claims against anesthesiologists in the United Kingdom (*Anaesthesia* 2018;73:223) and is a recognized source of liability in the ASA Closed Claims Project. The psychological injury — flashbacks, intrusive memories, fear of future pregnancy, and difficulty bonding — can persist for years and may influence decisions about subsequent pregnancies.

The ASA has responded with two key policy statements: the *Statement on Pain During Cesarean Delivery* (October 2023) and the *Statement on the Use of Adjuvant Medications and Management of Intraoperative Pain During Cesarean Delivery*, approved by the House of Delegates in October 2024. Both emphasize recognition, active treatment, and a lower threshold for conversion to general anesthesia.

The clinical imperative is clear: persistent pain under neuraxial anesthesia during cesarean delivery is a time-sensitive event that may require conversion to general anesthesia. The appropriate response is not prolonged reassurance, not relabeling pain as "pressure," not waiting for the block to catch up, and certainly not telling the patient the procedure will be over soon.

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2. The Airway Risk Calculus: Why Conversion Is Delayed

When neuraxial anesthesia fails to provide surgical anesthesia and adjunct interventions are inadequate, conversion to general anesthesia is the appropriate next step. In practice, this decision is frequently delayed — and the hesitation is not irrational. It reflects a well-founded concern about intubation risk in the obstetric patient.

Obstetric Airway Epidemiology

In a multicenter retrospective cohort of 14,748 cesarean deliveries performed under general anesthesia across 45 centers (2004–2019), Reale et al. reported the following:

Metric	Incidence
Difficult intubation	295 cases — 1 in 49
Failed intubation	18 cases — 1 in 808

(*Anesthesiology* 2022;136:697).

Why These Numbers Likely Underestimate Risk

This study almost certainly underestimates intubation difficulty in the specific context of conversion from failed regional to general anesthesia, for two reasons.

First, planned and emergent general anesthesia cases were not analyzed separately. Emergency intubations consistently carry higher risk than elective ones, so pooling these groups obscures the true risk profile of conversions.

Second, the authors themselves acknowledged that cases documented as difficult intubations by the treating provider — but lacking formal criteria — were excluded from the difficult intubation count. The study notes: *"There were multiple cases that were labeled as difficult intubations by the provider in the anesthetic record but either did not have a documented reason for this designation or did not meet our criteria for difficult intubation. Therefore, these cases were not counted as difficult intubations in our final manual review, and this discrepancy could potentially mean that our calculated frequency of difficult intubation is lower than the actual frequency."*

Pregnancy Physiology and the Airway

Pregnancy produces a constellation of physiological changes that make airway management uniquely high-stakes:

- **Reduced functional residual capacity (FRC):** Oxygen reserves are smaller, and desaturation after apnea onset is faster — often dramatically so — compared with non-pregnant patients.
- **Elevated basal metabolic rate:** Particularly during labor, increased oxygen consumption further accelerates the time to desaturation during laryngoscopy.
- **Airway edema:** Mucosal engorgement throughout pregnancy — worsened by labor, fluid administration, and pre-eclampsia — can elevate Mallampati score and reduce the margin for error.
- **Full stomach risk:** Aspiration remains a leading cause of anesthesia-related maternal mortality despite routine aspiration prophylaxis.
- **Weight and chest wall compliance:** These changes reduce the effectiveness of preoxygenation and bag-mask ventilation.

- **Urgency and emergent context:** Elevated provider task load impairs communication and technical execution at precisely the moment both are most critical.
- **Drapes up:** Intubation after surgical drapes are placed — or after incision — compromises patient positioning and restricts airway access.

The "200% Mortality" Setting

Obstetric anesthesia is unique in all of medicine: a failed airway during emergent general anesthesia can result in the simultaneous death of both mother and fetus or neonate — two deaths from a single airway event. This is what clinicians mean when they invoke the concept of "200% mortality." It is a risk framing that captures the singular stakes of the obstetric airway, and one that no other surgical specialty routinely confronts.

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3. The Visualization–Tracheal Access Paradox: Why Video Laryngoscopy Alone Is Not Enough

Video laryngoscopy has transformed airway management. It reliably improves glottic visualization, reduces Cormack-Lehane grade, and is recommended as the primary technique by the DAS 2025 guidelines for difficult tracheal intubation in adults.

But visualization is not tracheal access.

The dominant failure mode with video laryngoscopy is not failure to see the cords — it is failure to deliver the endotracheal tube through the cords and into the trachea.

Reported first-pass failure rates with video laryngoscopy range from approximately 6% in controlled operating room settings to approximately 15% in emergency department and ICU environments. The DAS 2025 guidelines explicitly recognize this phenomenon — the "can see, cannot intubate" scenario — and emphasize that successful intubation requires both adequate laryngoscopy *and* successful tube insertion.

The clinical picture is familiar: clear glottic view, inability to advance the endotracheal tube.

This is not a rare case. It is a recognized, recurring failure mode when VL is used. In the obstetric context — where desaturation is accelerated and two lives depend on successful intubation on the first pass— each failed attempt sharply elevates risk.

Contributing factors include the acute angle of approach to the glottis created by hyperangulated blades, rigid stylets that cannot conform to individual patient anatomy, and anterior laryngeal positioning that is common in pregnancy. The result: the provider sees the glottis but cannot pass the tube.

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4. Guideline-Aligned Principles for the Conversion Decision

Multiple national and international guidelines inform the conversion-to-general-anesthesia decision.

OAA/DAS Obstetric Airway Algorithm (Mushambi et al., *Anaesthesia* 2015):

- Maximum of two laryngoscopy attempts
- A third attempt only by an experienced colleague
- Rapid escalation to a second-generation supraglottic airway and, if needed, front-of-neck access (FONA)

DAS 2025 Adult Difficult Tracheal Intubation Guidelines:

- Video laryngoscopy as first-line technique
- Introducers (static or dynamic), stylets, and flexible bronchoscopes identified as tracheal access adjuncts
- Emphasis on limiting attempts, prioritizing oxygenation, and declaring failure early

ASA 2022 Difficult Airway Guidelines:

- Team-based planning with pre-assigned roles
- Primary and backup equipment strategy established before induction
- Obstetric patients explicitly within scope
- Combined technique equipment (dynamic tracheal access devices used alongside video laryngoscopy) should be considered as a primary technique and required equipment be kept immediately available

SOAP Center of Excellence (COE) Criteria:

- Track and review general anesthesia rates (benchmark ≤5%, or active quality review documented)
- Require an obstetric difficult-airway cart including video laryngoscopy and surgical airway equipment
- Equipment stored on the obstetric unit

The through line across all guidelines is consistent: plan before you act, use video laryngoscopy, limit your attempts, have backup equipment immediately available, and escalate early. The *Prepared for Conversion* framework operationalizes what these guidelines already mandate.

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5. Operational Barriers That Delay Conversion

In real-world practice, barriers to timely conversion function as a compounding stack of individual risk factors.

Equipment availability latency. Even where guidelines recommend video laryngoscopy and institutional policy mandates its availability, real-world readiness fails when the video laryngoscope is not in the room or not powered, when advanced airway equipment — fiberoptic devices, dynamic introducers, backup supraglottic airways — must be retrieved from another location, and when a "don't open until needed" culture introduces avoidable delay at the moment of greatest time pressure.

Role and attempt ambiguity. Without scripted role assignments, teams must improvise under stress: who performs laryngoscopy, who assists, who prepares backup equipment, who enforces the attempt limit, who calls for help. This drift leads to unstructured, repeated laryngoscopy attempts — directly contradicting the two-attempt limit emphasized by OAA/DAS — and increases the risk of aspiration, airway trauma, and intubation failure.

Staffing constraints. Labor and delivery is often a clinical island, particularly during nights and weekends. A single anesthesia provider covering the unit without immediate backup amplifies every other barrier. When a provider anticipates managing an airway crisis alone, the psychological threshold to initiate conversion rises — sometimes to the patient's detriment.

Sociocultural pressure. The strong cultural preference for an awake delivery — from patients, families, and sometimes the surgical team — creates subtle but real hesitation to convert. This pressure is often well-intentioned but becomes harmful when it delays treatment of uncontrolled intraoperative pain.

The nursing dimension. Labor and delivery nurses are frequently the closest observers of patient distress and the first to hear "I can feel it." Without clear language, institutional authority, and a supported escalation pathway, nursing advocacy can be blunted at the moment it matters most.

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6. The Dynamic Introducer: Closing the Tracheal Access Gap

The visualization–tracheal access paradox creates a specific, addressable problem: tube delivery failure despite adequate glottic visualization when standard static tracheal access equipment is used. A dynamic articulating introducer is designed to complement video laryngoscopy by providing active steerability, precision navigation during tube advancement, and intuitive depth control — directly addressing the failure mode that static stylets cannot resolve.

Reported Clinical Experience

Rescue case series (Shah et al., *A&A Practice* 2021;15:e01418): In 34 consecutive rescue attempts following failure with both video laryngoscopy and direct laryngoscopy using conventional equipment, a dynamic articulating introducer achieved a 97% overall success rate (33/34). In the subset where both video laryngoscopy and direct laryngoscopy had already failed, first-pass rescue success was 100% (12/12).

Comparative analysis (Shah et al.): In anticipated difficult airways, a combined video laryngoscopy plus dynamic stylet approach achieved higher first-pass success than awake fiberoptic bronchoscopy (88.7% vs. 74.2%), with lower failure rates and faster in-room-to-intubation times.

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7. The "Prepared for Conversion" Reliability Bundle

A conversion-ready cesarean delivery environment is built on four principles: adherence to difficult airway management guidelines, intubation attempt discipline, oxygenation priority, and the immediate availability of best-in-class visualization and tracheal access equipment — paired with clearly defined team roles.

In-Room Readiness (Before Induction or at Conversion Trigger)

Item	Standard
Video laryngoscope	In room, powered, blade selected
Static tracheal access device	Opened, lubricated, loaded with 6.5 ETT
Dynamic tracheal access device	Opened, lubricated, loaded with 6.5 ETT
Suction	Checked and functional
Second-generation supraglottic airway	Immediately accessible, opened
FONA kit	Location confirmed by team
Roles assigned	Laryngoscopist, assistant, SGA preparation, call for help, support person communication
Attempt limit defined	Two intubation attempts → SGA; third attempt only by experienced colleague per OAA/DAS

Team Micro-Brief (60 Seconds)

Before conversion, the following should be stated aloud:

- *"We are converting to general anesthesia for uncontrolled pain."*
- *"Video laryngoscopy is ready. Static and dynamic tracheal access devices are in the room, open, and ready for use. The supraglottic airway is open and immediately available."*

- *"Two attempts maximum. If we cannot place the endotracheal tube, we go to the supraglottic airway."*
- *"[Name] is assisting and aware of all equipment."*
- *"[Name] is calling for backup."*

Post-Event Quality Review

- Track every general anesthesia conversion: trigger, number of attempts, devices used, first-pass success, and complications
- Track patient-reported pain events: timing, severity, team response, and time to resolution
- Review equipment latency: what was not in room and what caused the delay
- Analyze neuraxial failure patterns: topped-up epidural vs. spinal, block assessment findings at the time of pain report
- Aligning documentation and reporting with SOAP COE criteria

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8. The Nursing Role: Advocacy, Readiness, and Language

Labor and delivery nurses occupy a critical position in the conversion pathway. They are the providers closest to the patient, typically the first to hear pain reports, and uniquely positioned to drive unit-level readiness.

Advocacy language when a patient reports pain:

- *"She's reporting sharp pain — please reassess the block."*
- *"Her pain score is escalating. What is our plan if we need to convert to general anesthesia?"*
- *"Can we pause before proceeding to the next step?"*

Readiness ownership at huddle or time-out:

- *"Is the video laryngoscope in the room and powered?"*
- *"Are both static and dynamic tracheal access devices opened and loaded? Is the supraglottic airway open and immediately available?"*
- *"Who calls for a second provider if we cannot place the endotracheal tube?"*

Documentation discipline:

- Record the patient's exact words. If she said "burning," document *burning* — not "discomfort."
- Document pain reports, team responses, and time intervals between events.

The "pressure" trap: The most damaging pattern in painful cesarean delivery events is often not a drug failure — it is a language failure. When "just pressure" becomes the reflexive response to every patient report, patients learn to stop reporting. Nursing can interrupt this

pattern by insisting on accurate language and clear escalation, and by giving voice to what the patient is actually experiencing.

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9. Conclusion

Pain during cesarean delivery is common, consequential, and now publicly visible. The barrier to timely conversion to general anesthesia is real — rooted in airway physiology, operational friction, and the singular stakes of obstetric airway management, where two lives depend on a single tube pass.

The solution is not to minimize airway risk. It is to engineer readiness so that airway risk is managed rather than avoided.

Prepared for Conversion means:

- Video laryngoscopy in the room and powered — not on a cart down the hall
- Static and dynamic tracheal access equipment immediately available, opened, loaded, and ready for use before the crisis begins
- Attempt discipline defined in advance — not improvised under stress
- Roles assigned before induction — not negotiated in the moment
- Backup pathways confirmed: call for help rehearsed, supraglottic airway accessible, FONA kit located

The public conversation has changed. Patients will arrive with questions shaped by media coverage and personal experience. They deserve honest answers, clear protocols, and a team that is not just willing to act — but equipped and prepared to do so when pain demands escalation.

Conversion to general anesthesia is not failure. It is appropriate escalation. And escalation, done well, is the highest expression of patient-centered care.

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