UPDATE ON OBSTETRIC ANESTHESIA: PEARLS FROM THE LITERATURE IN 2025

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I have no conflicts of interest to disclose

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GOALS & OBJECTIVES

Discuss how literature from the past year may:

1. Change clinical practice in obstetric anesthesia via new **guidelines and policies**.
2. Produce best practices for **analgesic and anesthetic techniques** during labor and delivery.
3. Optimize and expedite management of **anesthetic and obstetric complications.**
4. Alter practices affecting the **fetus and newborn**.

2

NATIONAL GUIDELINES AND POLICIES

3

NEW ASA STATEMENTS ON OB ANESTHESIA

These statements were approved by the ASA HOD in 2025:

- *Antenatal Anesthesia Consultation*: recommends when to obtain anesthesia consults for medically complex patients.
- *Anesthesia Management and Support for External Cephalic Version*: recommends neuraxial analgesia to ↑ success of ECV.
- *Anesthesia Services Staffing Labor and Delivery*: considerations for our services on L&D, including obtaining hospital support.
- All statements can be found on the ASA website: *asahq.org*
- Of note, our own Rachel Kacmar is the new Chair of COBA!

4

MATERNITY CARE DESERTS

Table 1. - Number of U.S. Hospitals Providing Obstetric Care by Annual Number of Births

Survey Year	Hospitals with Obstetric Care	Total Births
1981	4,163	3,667,316
1991	3,545	3,669,112
2001	3,160	3,973,925
2011	2,900	3,888,844
2020	2,846	3,536,150
2022*	2,075	3,661,220
2023	1,893	3,591,328

*2022 data were used to assess postpandemic hospital closures and birth rates.

Anesthesiology 2025;143:330

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MATERNITY CARE DESERTS & MATERNAL MORTALITIY

What is the association between level of maternity care access and pregnancy-related mortality?

- March of Dimes used info on access to maternity care by county paired with CDC data on maternal mortality by county.
- They included almost 15 million live births. Levels of L&D access were rated as desert, low, moderate and full access.
- Compared with full access counties "desert" counties had a significantly higher maternal mortality rate: 32.3 vs 23.6 per 100K live births, RR 8.6.

Obstet Gynecol 2025;146:181

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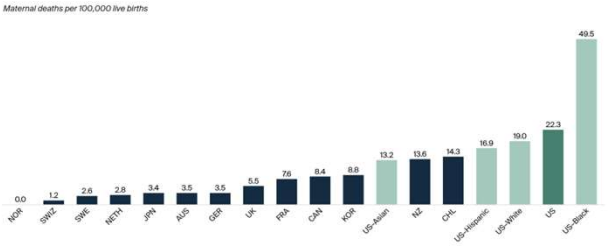
COMMONWEALTHFUND.ORG 2023

The United States continues to have the highest maternal death rate, with the rate for Black women by far the highest of any group.



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DISPARITIES IN OBSTETRIC ANESTHESIA

A meta-analysis of 19 studies elucidated disparity in anesthesia:

- Asian (OR 0.72) and Black (0.80) patients had *lower* odds of receiving neuraxial analgesia during labor.
- Black patients were *more* likely to receive general anesthesia for cesarean compared with White patients (OR 1.60).
- A U.S. nationwide analysis of inpatient epidural blood patch use after PDPH found 53% of White patients received EBP…..
- *But* Hispanic (OR 0.80), Asian or Pacific Islander (0.74) and Black (0.69) patients were *less* likely to receive EBP.

Anaesthesia 2025;80:757 / Anesth Analg 2024;139:1190

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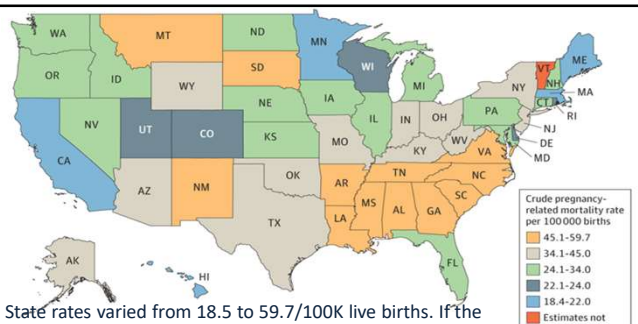

State rates varied from 18.5 to 59.7/100K live births. If the *national* rate could be ↓ to the lowest *state* rate, 2679 maternal deaths could have been prevented. *JAMA Network Open 2025;8:e254325*

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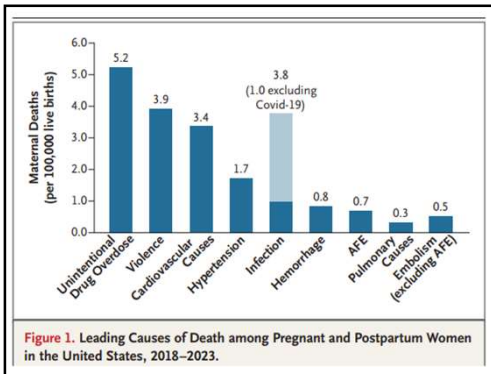

Figure 1. Leading Causes of Death among Pregnant and Postpartum Women in the United States, 2018–2023.

Violence and drug overdose accounted for 2,018 deaths, while CV causes, hypertension, infection, and hemorrhage together accounted for 2,141 deaths.

NEJM 2026;PAP (Azad)

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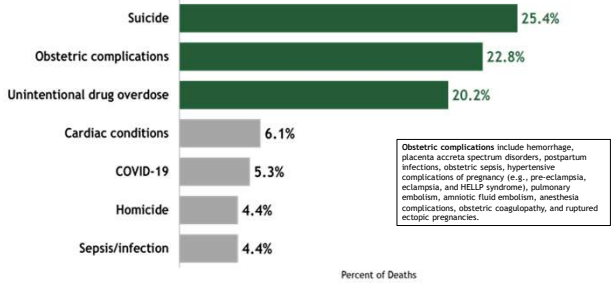
The leading causes of pregnancy-related deaths 2019-2023 in Colorado were suicide, obstetric complications, and unintentional drug overdose



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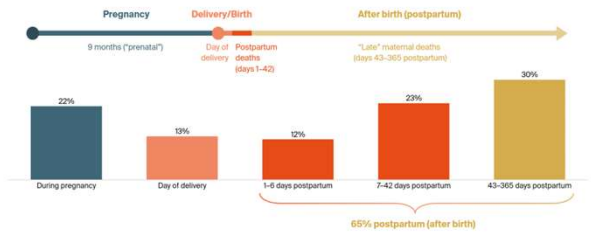
COMMONWEALTHFUND.ORG

Two-thirds of U.S. pregnancy-related deaths occur during the postpartum period.



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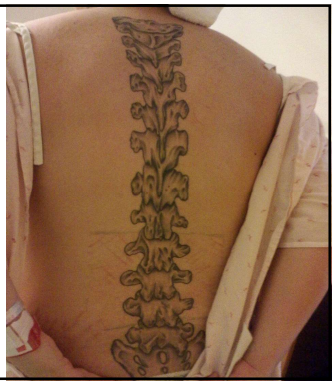
LABOR ANALGESIA



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IMPROVING OUTCOMES: DOULA SUPPORT

A meta-analysis was used to estimate the association between doula support in labor and need for cesarean delivery.

- 18 studies (RCT and observational) and 367K patients.
- Rate of cesarean delivery was lower: 17.5% with doula support vs 23.6% with standard care, RR 0.71.
- Rates of operative vaginal delivery were also lower; RR 0.64.
- No difference in low 5-minute Apgar scores or use of neuraxial anesthesia.

Obstet Gynecol 2025;146:73

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HOW TO MEASURE STAFFING NEEDS ON L&D?

Estimates of anesthesia activity on L&D based only on annual number of deliveries do not reflect actual staffing needs.

- Neuraxial analgesia & cesarean delivery rates vary by hospital.
- Case timing and their urgency are unpredictable on L&D.
- Antepartum consultations and multi-disciplinary care coordination are part of the L&D practice and take time.
- When the EMR was used to document concurrent activities and our utilization for every minute of 1 year, the need for similar staffing nights & weekends was well-documented.

J Clin Anesth 2026;108:112054

See 2025 ASA Statement: *Anesthesia Services Staffing L&D*

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CONSENT FOR EPIDURAL ANALGESIA IN LABOR

Women who received an epidural during induction of labor were interviewed postpartum about the anesthesia consent process.

- They felt they received limited information about analgesia alternatives due to time constraints during labor. *Improve the timing and quality of anesthesia information provided to patients.*
- They felt that although risks were mentioned, there was little chance for them to voice their concerns, and that if they did it was downplayed by the anesthetist. *Invite questions/concerns*.
- The value of discussion and of written materials during labor was limited by pain, fatigue and opioids, especially later in labor. By then, they didn't *want* to ask questions that would delay their epidural placement. *Anaesthesia 2025;80:1174 (editorial), 1199*

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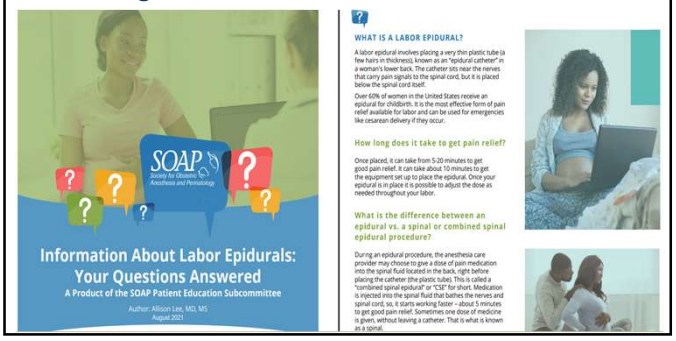
SOAP.org: THE PAINLESS PUSH WEBSITE



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FETAL DECELERATIONS AFTER EPIDURAL ANALGESIA

Why do abnormal fetal heart rate patterns sometimes develop after neuraxial analgesia (epidural, CSE, or spinal)?

- 838 term singleton fetal tracings were reviewed; prolonged decels occurred in 6.6% within 30 minutes of neuraxial.
- No changes in systolic or diastolic BP were seen → hypotension is rarely the cause of prolonged decelerations.
- Uterine hyperstimulation was the strongest factor associated with decelerations. Most at risk: nulliparas patients on oxytocin with higher pain scores pre-epidural.
- Rx should be fluids, stopping oxytocin, and NTG or terbutaline.

Am J Obstet Gynecol MFM 2025;7:101747

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PROGRAMMED INTERMITTENT EPIDURAL BOLUS

What are the optimal PIEB settings (the ED 90) during the first stage of labor after a dural puncture epidural technique?

- 40 nulliparous women, 25 gauge dural puncture, up-and-down sequential allocation study.
- ED90 for bolus = 8.8 - 9.2 ml with a fixed 40-minute interval.
- No patients experienced motor block.
- In our practice we program 10 ml q 45 minutes in active labor. or 5 ml q 30 minutes in early labor, + the PCEA 5 ml q 10.

Can J Anesth 2025;72:254

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USES FOR 2-CHLOROPROCAINE ON L&D

We *need* a short-acting spinal anesthetic option like 2-CP on L&D.

- Cervical cerclage: 50mg IT + fentanyl → earlier discharge than spinal bupivacaine.
- Pain during cesarean: intra-peritoneal administration after delivery at doses ≤ 1200 mg has safe plasma levels, no LAST.
- True allergy to amide local anesthetics: use 1.5% CP for labor analgesia boluses and infusion, or 15 mg for IT analgesia.
- External cephalic version: no studies on dosage; ~30 mg IT?
- Other short procedures: PPTL, D&C, cerclage removal, some of the minimally invasive fetal surgeries?

SOAP newsletter, Spring 2025, p 7

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CESAREAN DELIVERY

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NPO TIMES FOR CESAREAN?

- Gastric emptying is not ↓ in 2nd and 3rd trimesters. Labor and opioids will ↓ emptying, but epidural analgesia improves it.
- Emptying after water, carbohydrate drinks and tea with milk are no different than fasting in gastric cross-sectional area. Solids are unpredictable during labor; consider POCUS?
- Unlimited preoperative access to water before elective cesarean will ↓ perioperative vomiting, ↑ satisfaction, and ↓ intraoperative vasopressor doses during spinal anesthesia.

Br J Anaesth 2025;134:124 / Am J Obstet Gynecol 2024;231:651

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IS GENERAL ANESTHESIA SAFE FOR NEONATES?

Neonatal outcomes influence the choice of neuraxial vs general anesthesia for cesarean, with neuraxial assumed to be safer.

- A meta-analysis of 36 RCTs with 3456 neonates compared neuraxial to general anesthesia for cesarean.
- Apgar scores at 1 & 5 minutes were slightly lower (but not low!) with GA. Mean difference at 1 min = 0.58 points and at 5 min = 0.09 points.
- There were no differences between anesthetics after the immediate newborn period and no difference in NICU admission.
- If GA is indicated due to maternal co-morbidities, fetal emergencies or patient request, it is safe for the neonate.

Anesthesiology 2025; 144:325

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IS GETA ASSOCIATED WITH PP DEPRESSION?

Review of 326K cesarean deliveries followed patients for one year to assess for readmission, clinic visit or ED visit related to depression.

- Overall, 6% received GETA compared to 94% receiving neuraxial.
- Use of GETA was associated with a 38% ↑ risk of depression requiring hospitalization and a 45% ↑ risk of suicidality.
- Confounders: Why was GETA used? Maternal morbidities, fetal concerns, emergencies are all associated with PPD as well.
- When GETA is used for cesarean, consider a postpartum debrief with the patient, especially if they screen + for PPD.

Anesth Analg 2025;141:618

24

SEDATION FOR NEURAXIAL PLACEMENT?

Patients scheduled for cesarean delivery who requested anxiolysis received 1-2mg boluses of remimazolam before their neuraxial procedure until sedated but able to answer questions.

- Anxiety scores ↓ from 7.5 to 3.3.
- There were no desaturation events, NRFHTs, abnormal Apgar scores or ↓ fetal blood pH.
- All stated remimazolam improved their experience and would request it again. All remembered their delivery.
- Other options – fentanyl? dexmedetomidine? N_2O?
- Use sedation for labor epidural placements if requested?

Anesth Analg 2025;141:660

25

PHENYLEPHRINE INFUSION vs BOLUS

After spinal anesthesia for cesarean, how do prophylactic phenylephrine infusions compare to as-needed phenylephrine boluses to manage hypotension?

- There is no difference in neonatal outcomes between infusion and bolus, including Apgar scores and cord gases.
- BUT…infusions will ↓ the risk of hypotension and intraop nausea & vomiting + fewer interventions are needed to maintain BP → less workload intraoperatively.
- Consider infusion doses of 50µg/min or 0.5µg/kg/min.

Anesth Analg 2025;139:1144

Anesth Analg 2025;141:732 (editorial),736

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NOREPINEPHRINE FOR SPINAL HYPOTENSION

What is the optimal NE infusion rate to prevent hypotension after spinal anesthesia for cesarean?

- Vasopressors with β-agonist activity may support maternal HR and cardiac output better than phenylephrine.
- Blinded RCT to find the ED50 of NE and phenylephrine.
- Potency *ratio* was ~ 1 NE : 13 P.
- Extrapolating to NE ED 95 → infusion rate of 1.9-3.8 µg/min.
- Bolus dose potency ratio also ~13: 8 µg NE vs 100 µg P.

Anesth Analg 2025;141:17

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BEST TREATMENT FOR SHIVERING?

Shivering is common during neuraxial for cesarean, unpleasant for the patient and interferes with BP measurements. This meta-analysis compared IV treatments.

- 20 RCT with 1983 patients were included.
- Odds ratios for effective treatment of shivering:

Dexmedetomidine OR 38 > Tramadol OR 34 > Nalbuphine OR 26 > Meperidine OR 21 > Ondansetron OR 7 > Clonidine OR 3.

- 4 drugs were effective and dexmedetomidine was top-ranked for all outcomes. Usual dose ~20 mcg.

J Clin Anesth 2025;100:111680

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FASCIAL PLANE BLOCKS AFTER CESAREAN

A meta-analysis of 18 trials and 1525 patients compared truncal blocks to IT morphine after cesarean delivery.

- 11 trials evaluated TAP blocks: analgesia was inferior to IT morphine BUT block group had ↓ nausea and vomiting.
- 2 trials evaluated erector spinae plane (ESP) blocks: equivalent pain relief to ITM AND similar incidence of N&V.
- 5 trials evaluated QL blocks: similar pain relief to ITM PLUS reduced odds of N&V → ***best*** alternative to IT morphine.

Br J Anaesth 2025;134:1415

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PREVENTING POSTOPERATIVE N&V

From the 5th *Consensus Guidelines for Management of Postoperative Nausea & Vomiting*: Executive Summary

- Cesarean delivery patients have ↑ risk factors for PONV: female, non-smoker, younger age, laparotomy/gyn surgery, postop opioids ± history of PONV or motion sickness = 5 or more points).
- Prophylaxis with 3-4 agents in different classes is recommended.
- Metoclopramide and scopolamine patches are very effective after cesarean and for neuraxial morphine side effects. Dexamethasone at ≥ 8 mg provides opioid-sparing and well as PONV prophylaxis.

Anesth Analg 2025;PAP (Gan)

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OPPORTUNISTIC SALPINGECTOMY DURING TL

- Many/most ovarian cancers are derived from the fallopian tube.
- Opportunistic salpingectomy at the time of pelvic surgery such as cesarean delivery, PPTL, and hysterectomy may ↓ the most common type of ovarian cancer by **80%** over a lifetime.
- Salpingectomy does not ↑ risk of complications, e.g. bleeding.
- Of 1877 patients with ovarian cancer, 24% had a missed opportunity to have had a salpingectomy during a prior surgery.
- ACOG supports counseling and discussion as a risk reduction opportunity in the general population.

JAMA Surg 2025;160:1091 / Obstet Gynecol 2019;133:e279

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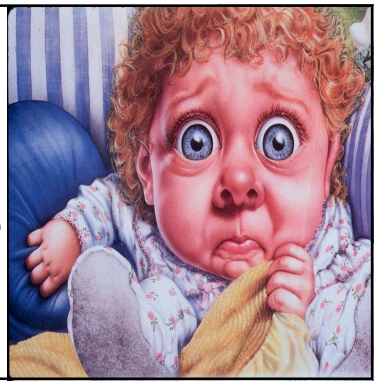
MANAGEMENT OF ANESTHETIC COMPLICATIONS



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MULTISOCIETY INTERNATIONAL GUIDELINES: PDPH

Delegates from SOAP, OAA, ASRA, ESRA developed 10 high-yield questions→ performed a thorough literature search→ generated 50 recommendations for PDPH. Every L&D needs this document!

- PDPH ↑ risk of subdural hematoma, cerebral sinus thrombosis, meningitis and other neurologic complications.
- NO pharmacologic modalities have shown a benefit in preventing or treating PDPH. Symptom control vs treatment.
- Epidural blood patch remains the most effective treatment and should not be delayed if severe symptoms are present.
- Discharge instructions and follow-up are mandatory!

Reg Anesth Pain Med 2024;49:471 / Can J Anesth 2025;72:1163

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OPTIMAL VOLUME OF INJECTED BLOOD FOR PATCH

Retrospective review of 317 patients who had received an epidural blood patch (EBP) for PDPH over 10 years, injected until the patient had symptoms of back pain or pressure, aiming for 30 ml.

- Median volume injected = 28 ml.
- 23% required a repeat blood patch for relief.
- A larger injected volume of blood was associated with ↓ need for a 2nd blood patch, and volumes ≥ 30 ml were associated with ↑ likelihood of symptom resolution.
- ↑ days from PDPH diagnosis to EBP was also associated with ↑ likelihood of successful treatment.

Anesth Analg 2026;PAP (Berger)

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INTRAOPERATIVE PAIN DURING CESAREAN: 2 studies

A meta-analysis of intraop pain with neuraxial included 34 articles:

- The pooled incidence of intraop pain was 17%.
- Spinal anesthesia had the lowest incidence of intraop pain (14%), while epidural top-up had the highest (33%).

An international prospective cohort study of 3693 patients was done over 8 weeks to determine the incidence of intraoperative pain:

- The overall incidence was 7.6%; 3.7% with spinal, 9.2% with CSE, and 12.2% with epidural top-up anesthesia.
- Median pain score was 6; 10% were dissatisfied with how the anesthesia team managed their pain.

Anesthesiology 2025;143:156 / Anesthesiology 2026;PAP (O'Carroll)

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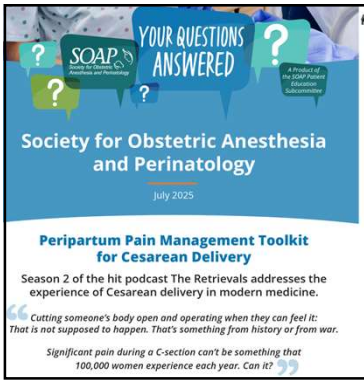

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INTRAOPERATIVE PAIN DURING CESAREAN

500 patient-anesthesiologist dyads completed questionnaires in PACU on pain, anxiety, medication requests and subjective experiences after cesarean with spinal anesthesia.

- Despite 10% reporting pain, only half received analgesics.
- Anxiolytics were given 4 times more often.
- Only 41% of patients who asked for analgesics actually got them. Is this the pain vs pressure problem?
- Anesthesiologists may not accurately assess their patients' intraoperative pain, so encourage patients to self-advocate.

J Clin Anesth 2025;100:111689

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ANESTHESIA & CHILDBIRTH-RELATED PTSD

Several anesthetic-related complications during delivery are risk factors for developing or exacerbating PTSD:

- Failed spinal/epidural anesthesia with pain requiring rescue medications or conversion to general anesthesia.
- Traumatic needle insertion causing pain during neuraxial procedures.
- "Wet tap" followed by severe PDPH.
- Severe postoperative nausea & vomiting.
- Accidental awareness during general anesthesia.
- We *must* practice trauma-informed care: close communication, allowing patients control when possible, and using medications if desired.

Anesth Analg 2024;139:1156

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ASRA: NEURAXIAL AND ANTI-COAGULANTS

5th edition of the guideline reviews literature published since 2018.

- New statement: "It is not recommended to maintain neuraxial…in the setting of continuous intravenous heparin administration."
- A section on pregnancy notes that the first 6 weeks postpartum have a higher rate of thrombosis and PE than pregnancy, which is also a hypercoagulable state. Heparin's PTT response and duration are ↓ during pregnancy, as are aXa levels and duration for LMWH.
- Thus, the incidence of neuraxial hematoma is ↓ in pregnancy compared with older, orthopedic patients. "*Risk of GA may be greater than neuraxial in select high-risk parturients receiving VTE prophylaxis, and exceptions to these recommendations may be appropriate*."

Reg Anesth Pain Med 2025;PAP (Kopp)

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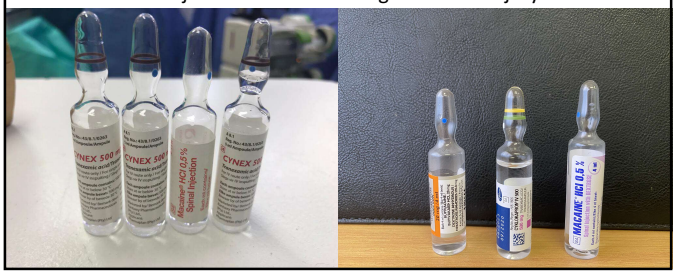
FDA PUTS BOXED WARNING ON TXA

The FDA has identified and evaluated multiple medication errors of intrathecal injections of TXA leading to serious injury or death.



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FAILED SPINAL FOR PPTL

What is the failure rate for single-shot spinals for PPTL?

- Retrospective single-center review of 243 cases.
- 11% of spinals failed, requiring conversion to GA.
- Studies from different institutions have also reported 15-20% failure rates → higher than spinals for cesarean delivery.
- Cause unknown, but studies have shown PP patients require a higher dose of IT bupivacaine due to lower progesterone levels and ↓ pressure in the epidural space.
- Plan: ↑ dose? Use CSE? Monitor your own practice?

Can J Anesth 2025;72:1379

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ANESTHETIC NEUROTOXICITY

In an RCT of 400 patients < 2 years old, did sevoflurane-sparing anesthesia improve neuro-developmental outcomes? NO.

- A randomized comparison of maintenance with sevoflurane vs dexmedetomidine + remifentanil + minimal sevoflurane.
- There was no difference in IQ scores or social, emotional and behavioral functioning at 30 months eval; 5-year follow-up is pending as well.
- Like the GAS trial, this RCT also suggests you shouldn't alter your anesthetic in infants to avoid neurotoxicity.

Anesthesiology 2025;143:827, 799 (editorial)

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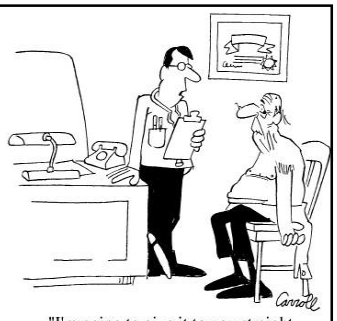
OBSTETRIC & MEDICAL COMPLICATIONS



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BLOOD LOSS AND INDICATION FOR CESAREAN

What effect does indication for cesarean delivery have on QBL?

- Based on 4881 cases performed at a large academic hospital.
- Mean QBL for all their cesarean deliveries was 792 ml.
- The highest blood loss occurred during CD for arrest of labor (failure to progress). QBL during cesarean in a laboring patient was > 1500 ml in 18% of primary CD and in 13% of repeat CD (i.e. failed VBAC).
- The lowest blood loss was during elective repeat CD or fetal malposition (breech).

Am J Obstet Gynecol 2025;232:478

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PROPHYLACTIC ADDITIONAL UTEROTONIC?

Patients having intrapartum cesarean after laboring are at ↑ risk of PPH. Would prophylactic methylergonovine improve atony?

- 160 patients were randomized to receive routine oxytocin infusion + methylergonovine *or* oxytocin + saline.
- Only 20% of the methergine group required additional uterotonics vs 55% in the placebo group, RR 0.4.
- Other improved outcomes with M: good uterine tone (80% vs 41%), ↓ incidence of PPH (35% vs 59%), lower mean QBL (967 ml vs 1315 ml), and fewer blood transfusions (5% vs 23%).
- Should we consider prophylaxis for other high-risk indications?

Obstet Gynecol 2022;140:181

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CALCIUM FOR UTERINE ATONY

Calcium has been shown to ↓ PPH from uterine atony.

- In vitro: uterine samples with atony had less ↑ in Ca after oxytocin than those without atony (22% vs 74%).
- In vivo: higher calcium levels correlated with clinical obstetrician assessment of better uterine tone.

What is the bioequivalence of calcium chloride vs calcium gluconate? Is the onset time the same?

- 1 gm CaCl = 3 gm Ca gluconate. Onset times were the same and both declined by half within 30 minutes.

Anesth Analg 2025;140:491 / Anesthesiology 2025;142:121

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TIMING OF TRANEXAMIC ACID ADMINISTRATION

Fibrinolysis activates after placental delivery, and this is exaggerated in postpartum hemorrhage. Early TXA is preventive. Should TXA be administered before delivery in high risk cases?

- The usual protocol is to administer TXA after cord-clamping in high-risk cases to avoid fetal exposure.
- TXA crosses the placenta and fetal blood concentrations are comparable to maternal, but there is no evidence of adverse neonatal outcomes in animal studies, case series or trials.
- Consider administration *before* placental separation for severe antepartum hemorrhage (e.g. previa) or for known accreta.

Anesthesiology 2025;143:1449

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CELL SALVAGE RECOMMENDATIONS

Cell salvage is recommended – not contraindicated - in OB cases with anticipated large-volume blood loss > 10% blood volume, refusal of blood products, and/or difficulty cross-matching.

- A review of perioperative red blood cell salvage (in all settings) quotes recommendations for obstetric cases from: ACOG, ASA, NIH, Australia, Italy, Great Britain and Ireland, European Society of Anesthesiology and the European Committee on Blood Transfusion.
- Use leukocyte depletion filters (5-50 µm).
- Take precautions against Rh isoimmunization.
- But routine use during CD is not cost-effective or recommended.

Anesthesiology 2025;143:1357

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OBSTETRIC HEMORRHAGE-CONTROL DEVICES

ACOG The American College of Obstetricians and Gynecologists

CLINICAL PRACTICE UPDATE

OCTOBER 2025

Use of Nonsurgical Hemorrhage-Control Devices for Postpartum Hemorrhage Management

ACOG recommends that hospitals and other facilities that care for and transport obstetric patients have access to nonsurgical hemorrhage-control devices (ie, uterine balloon tamponade or intrauterine vacuum-induced devices) as part of a comprehensive management algorithm for PPH.

Obstet Gynecol 2025;146:569

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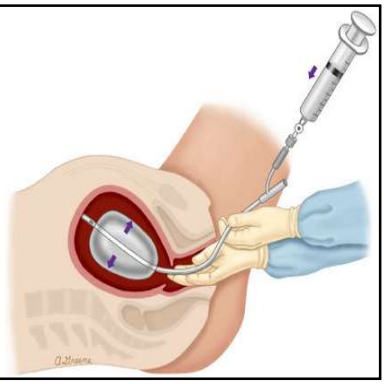
Intrauterine balloon tamponade has a success rate of 86% in treating PPH, especially due to atony or placenta previa, and has a low complication rate of < 6.5%.

Am J Obstet Gynecol 2020; 222: 293



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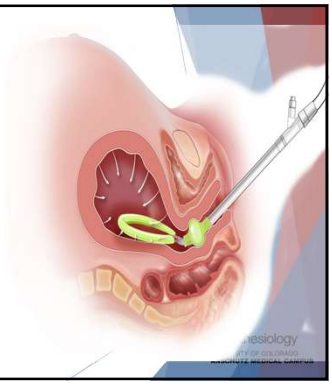
The intrauterine vacuum-induced hemorrhage control device (JADA) provides a rapid effective treatment option for PPH. In studies, control of PPH occurred in 3 minutes; 98% found it easy to use.

Obstet Gynecol 2021;136:882



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COMPARING TAMPONADE & VACUUM DEVICES

A prospective QI audit of 6K PPH cases found transfusion and blood loss after device placement was similar with either the Bakri®or JADA® devices. Earlier recognition of PPH refractory to oxytocics & earlier placement ↓ device failure and transfusion.

Obstet Gynecol 2025;145:65

A retrospective cohort study of 338 PPH cases found the balloon tamponade device and the vacuum tamponade device were similarly effective in managing refractory PPH due to atony.

Am J Obstet Gynecol MFM 2025;7:101638

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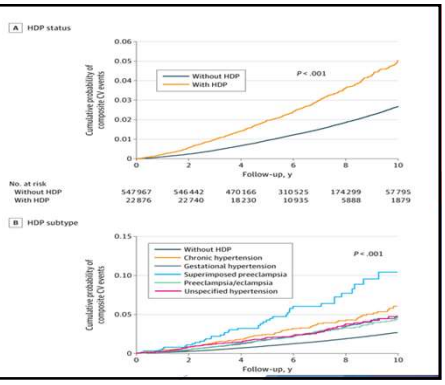
All the HTN disorders of pregnancy (HDP) subtypes are associated with modest ↑ in long-term cardiovascular risk, but chronic HTN with superimposed preeclampsia is associated with a ***markedly*** higher risk.

JAMA Intern Med 2026;PAP (Kwak)



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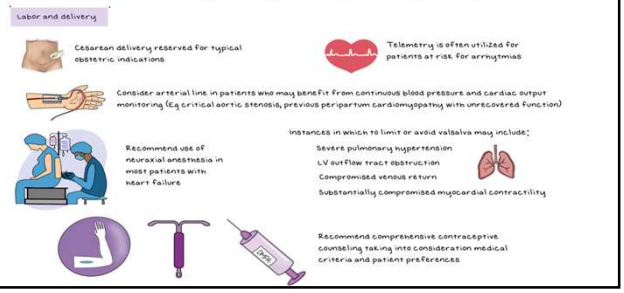
Society for Maternal-Fetal Medicine Consult Series #73: Diagnosis and management of right and left heart failure during pregnancy and postpartum



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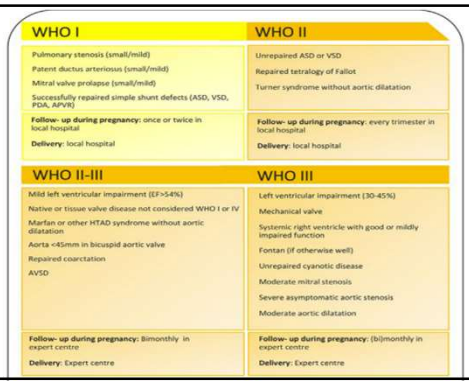
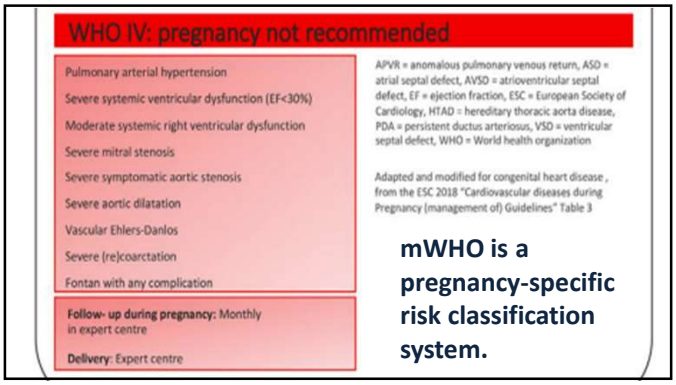


mWHO IS A PREGNANCY-SPECIFIC RISK-SCORING SYSTEM

55



mWHO is a pregnancy-specific risk classification system.

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SMFM HEART FAILURE RECOMMENDATION (of 17 total)

- We recommend continuous fetal heart rate monitoring during anesthesia administration, labor, and delivery for pregnant patients with heart failure.
- In the case of maternal cardiovascular changes prompting inpatient assessment or treatment, we recommend continuous or intermittent fetal heart rate monitoring, taking into consideration the gestational age and any relevant maternal or fetal factors that may impact fetal viability or the maternal clinical status.
- We recommend planned vaginal delivery at term in patients with heart failure in the absence of hemodynamic compromise or obstetric indications for cesarean;
- We recommend the use of neuraxial anesthesia in most patients with heart failure to provide appropriate analgesia and to limit the effects of labor on cardiac parameters;
- We recommend considering a limited or assisted second stage for some patients after input from cardiology about each individual patient's cardiac risk.

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PERIPARTUM MATERNAL CARDIAC ARREST

The MPOG database was used to describe details of maternal cardiac arrest during delivery and up to 7 days postpartum.

- Frequency: 11.2 per 100K deliveries or 1 in 9,000.
- Most common etiologies were hemorrhage (40%), amniotic fluid embolism (31%), & anesthetic complications e.g. high spinal (12%).
- Most occurred during cesarean delivery (68%) vs vaginal delivery.
- ROSC was achieved in 77% and survival to 30 days occurred in 68%.
- Demographics: age ≥40, BMI ≥40, Black & Asian/Pacific Islander race.
- Clinical factors: pulmonary HTN, placenta accreta spectrum, ischemic heart disease and stillbirth.
- Deviations from societal (SOAP) cardiac arrest guidelines in 18.4%.

Anesthesiology 2026;PAP (Furdyna)

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PAIN MANAGEMENT AND OPIOID-USE DISORDER

A consensus statement from SOAP, ASRA and SMFM covers key questions, optimization and practical management strategies.

- Prenatal optimization: methadone and buprenorphine management, anesthesiology consult
- Labor analgesia: neuraxial initiation and maintenance, post-delivery pain management
- Withdrawal, toxicity/overdose and monitoring issues
- Post-cesarean analgesia and multi-modal therapies

Anesth Analg 2025;140:1318, 1314 (editorial)

59

BUPRENORPHINE TREATMENT: 2 studies

Does buprenorphine treatment for OUD in pregnancy improve maternal and infant outcomes? Yes!

- In a cohort study of 14.5K dyads, B treatment was associated with a lower probability of severe maternal morbidity, preterm birth, and NICU admission compared to no B treatment.

What is the optimal dosing of buprenorphine in pregnancy? High!

- For 2925 pregnant patients followed from start of pregnancy to 90 days postpartum, high doses and longer duration of use led to ↑ odds of PP continuation and ↓ rates of overdose. Higher doses were not associated with NAS or low birth weight.

JAMA Health Forum 2025;6:e251814 / Am J Obstet Gynecol 2025;233:59

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ACOG
The American College of Obstetricians and Gynecologists

ACOG CLINICAL CONSENSUS

NUMBER 10
OCTOBER 2025
(REPLACES COMMITTEE OPINION NO. 722, OCTOBER 2017)

Cannabis Use During Pregnancy and Lactation

…cannabis use has been associated with adverse outcomes such as spontaneous preterm birth, low birth weight and developmental delay. ….obstetric health care professionals should be prepared to counsel and screen all patients and use evidence-based strategies to reduce cannabis use.

Obstet Gynecol 2025;146:600

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CANNABIS FOR NAUSEA IN PREGNANCY: 2 studies

- Data from 356K pregnancies found that preconception and prenatal cannabis use were associated with ↑ odds of mild and severe nausea & vomiting in the first trimester. The highest odds were in those using daily before or during early pregnancy.

In a secret shopper study, how did cannabis retailer employees counsel pregnant patients about the safety of of prenatal use?

- Among 505 retailers in CA, only 40% of employees said cannabis use was unsafe during pregnancy.
- 21% said it was safe, 19% said they weren't sure and ~17% said they couldn't give medical advice.

Obstet Gynecol 2025;145:519 / JAMA Network Open 2025;8:e2548373

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MATERNAL HIV INFECTION AND TRANSMISSION

Meta-analysis quantified vertical transmission during pregnancy by maternal HIV viral load. It included 147 studies with 83K mother-child pairs. Perinatal transmission varied by viral load:

- 5% transmission with ≥ 1000 viral copies per ml (aOR 22.5)
- 1.3% transmission with 50-999 copies per ml (aOR 6.3)
- 0.2% with < 50 copies per ml (aOR baseline)
- Women receiving ART with < 50 copies/ml near birth had 0% perinatal transmission, but they still had 0.1% per month risk of HIV transmission during breastfeeding. Patient counseling?

Lancet 2025;406:349

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MULTIPLE SCLEROSIS AND RELAPSE RATES

Is neuraxial safe for parturients with MS?

- A systematic review of 8 studies and 1315 parturients found no difference in relapse rates whether neuraxial was used or not. Relapses are more common postpartum than during or in the year before pregnancy. *Eur J Anaesthesiol 2025;42:508*
- Discontinuation of disease-modifying therapies before or during pregnancy can lead to high risk of relapse, but many of these drugs have unknown risks to the fetus. Expert consultation is needed to avoid undertreatment & relapse during pregnancy.

JAMA Neurol 2025;Gavoille and Krysko (editorial)

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ANESTHETIC MGT OF DIABETES IN PREGNANCY

Pregnancy is associated with insulin resistance and ↑ risk of hyperglycemia. Resistance is caused by placenta-produced hormones & resolves quickly PP → ↑ risk of hypoglycemia.

- Current recommendation from ACOG: glucose levels should be maintained between 70 and 110 mg/dl during active labor.
- Due to ↑ risk of stillbirth at term, labor is induced at < 40 wks.
- Subcutaneous insulin is typically restarted PP at ↓ levels (~20% of prebirth levels) to ↓ the risk of hypoglycemia.
- 5 to 10% of pregnant patients with DM have their pregnancy complicated by DKA – much higher than nonpregnant. DKA can be triggered by steroids, ie betamethasone, dexamethasone.

Anesthesiology 2025;143:424

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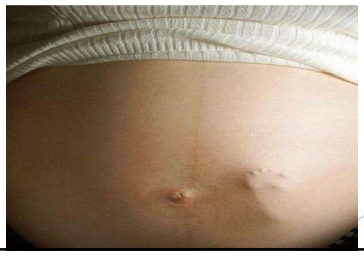
THE FETUS AND NEONATE



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ANTENATAL STEROIDS

Among preterm and extremely preterm infants, how quickly do antenatal steroids have a beneficial effect?

- 2 studies using U.S. or Canadian national cohorts of 7K-8K infants looked at time from steroid administration to birth and the outcomes of mortality and/or severe morbidity.
- There was ↓ mortality only 2 hours after steroids, and every additional hour was associated with a 1% ↑ in survival and survival without severe morbidity.
- The optimal interval was 12 hours to 14 days.

JAMA Network Open 2025;8:e2511315 and 2025;8:e2461312

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DELAYED CORD CLAMPING IN ALL NEONATES

A meta-analysis reviewed maternal and neonatal outcomes after delayed vs immediate cord clamping during cesarean delivery.

- 25 studies of neonates > 23 weeks gestation compared late (>30 seconds) cord clamping vs early.
- Delayed cord clamping improved newborn outcomes including their hematocrit and bilirubin levels with no adverse effects.
- No differences in maternal outcomes, e.g. EBL, PPH, additional uterotonics, or surgical time.

Am J Obstet Gynecol MFM 2025;7:101680

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HYPOTHERMIA FOR NEWBORN ENCEPHALOPATHY

Hypothermia induced < 6 hours after birth ↓ death and disability due to hypoxia-ischemia for infants born at ≥ 36 weeks. What about infants born < 36 weeks?

- 168 infants born at 33-35 weeks gestation with hypoxic-ischemic encephalopathy were randomized to receive normothermia vs hypothermia (unblinded) to 33.5°C for 72 hours, then rewarmed.
- Outcome: composite of death/disability at 18-22 months.
- Hypothermia did not decrease death or disability at 18-22 months corrected age. Different outcomes when ≤ 36 weeks.

JAMA Pediatr 2025;179:396

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