5. Utilize Best Practice Recommendations for Laboring Women with Regional Anesthesia (Epidural, Spinal, and Combined Spinal Epidural)

There continues to be significant debate within the birth community about the correct timing for placement of epidural anesthesia in laboring women, the effect epidural anesthesia may have on the length of labor, and the risk of operative vaginal birth and cesarean birth for women who choose to have epidural anesthesia during labor. Hospitals and anesthesiologists often have differing opinions on the best type, modality, and dosing for regional anesthesia. Examples include "walking epidural," combined spinal epidural (CSE), patient controlled epidural anesthesia (PCEA), continuous infusion epidural (CIE), and programmed intermittent epidural boluses (PIEB). The following recommendations by the Task Force *(Table 12)* are based upon the best available evidence, and in accordance with the ACOG/SMFM *Obstetric Care Consensus on Safe Prevention of the Primary Cesarean Delivery.*[3]

Table 12. Best Practice Recommendations for Regional Anesthesia[3,157,167-175]

Best Practice Recommendations for Regional Anesthesia
Do not avoid or delay epidural anesthesia as a method of reducing risk for cesarean delivery
In the absence of a medical contraindication, if a woman specifically requests pain relief by epidural anesthesia, there is no need to wait for a minimum or arbitrary cervical dilation before administering (maternal request is a sufficient indication to provide pain relief through regional anesthesia)
The woman should be assisted in changing position at least every 20 minutes to assist necessary fetal rotation
Allow for longer durations of the second stage for women with regional anesthesia (e.g. at least 4 hours in nulliparous women, at least 3 hours in multiparous women), as long as maternal and fetal statuses remain reassuring
Allow for passive descent when there is no urge to push (delayed pushing until there is a stronger urge to push, generally 1-2 hours after complete dilation). Passive descent is correlated with shorter overall pushing time and greater chance of spontaneous vaginal birth
Preserve as much motor function as possible by administering the lowest concentration of epidural local anesthetic necessary to provide adequate maternal pain relief. Epidural solutions containing opioids allow less local anesthetic use without compromising labor analgesia
Turning an epidural off during the second stage of labor to improve pushing efforts is rarely necessary and likely has minimal beneficial effect on the length of the second stage
Utilize patient-controlled epidural anesthesia (PCEA) with background maintenance infusion that is intermittent or continuous (for laboring women, this is superior to PCEA alone and continuous infusion epidural)

Relationship of Epidural Anesthesia to Risk of Cesarean Delivery

Although some studies show epidural anesthesia to be associated with an increased risk of operative vaginal delivery,[176] numerous other studies show no significant causal relationship between epidural anesthesia and the rate of cesarean birth.[175,177]

Timing of Epidural Placement

The evidence indicates there is no difference in rate of cesarean birth based upon "early" placement of epidural (e.g. less than 4 cm dilation) versus placement in active labor.[175,178] Similarly, Wong and colleagues[179] demonstrated no significant difference in cesarean birth for women undergoing induction of labor and randomized to receive either early or late epidural placement.

A joint statement by the American Congress of Obstetricians and Gynecologists and the American Society of Anesthesiologists states, "There is no other circumstance where it is considered acceptable for an individual to experience untreated severe pain amenable to safe intervention, while under a physician's care. In the absence of a medical contraindication, maternal request is a sufficient medical indication for pain relief during labor. Pain management should be provided whenever medically indicated."[183]

Regarding the timing of epidural and malposition of the fetus, it is not clear if epidural anesthesia predisposes to persistent malposition, or if an already malpositioned fetus increases the need for pain relief. While there is no evidence to suggest that epidurals cause malposition of the fetus, the preponderance of evidence suggests that those women who request and receive epidurals are up to four times as likely to have an occiput posterior fetus than women without epidurals.[180,181] Evidence also suggests that placing an epidural later in labor (greater than or equal to 5 cm dilation, or greater than or equal to 0 station) is associated with fewer persistent malpositions.[181,182]

Relationship of Epidural to Overall Length of Labor and Duration of the Second Stage

The vast majority of studies indicate that labor is lengthened in women with epidural anesthesia.[177] Also, a recent retrospective analysis of 42,000 women demonstrated that epidural use is associated with a larger effect on the second stage of labor than previously suspected.[184]

The amount of anesthetic administered may also play a role. A 2011 meta-analysis of epidural anesthetic concentrations revealed that low concentrations (less than or equal to 0.1% epidural bupivacaine or less than or equal to 0.17% ropivacaine) were associated with fewer operative vaginal deliveries and a shorter second stage.[171]

A statement by the American Congress of Obstetricians and Gynecologists and the American Society of Anesthesiologists states, "There is no other circumstance where it is considered acceptable for an individual to experience untreated severe pain amenable to safe intervention, while under a physician's care. In the absence of a medical contraindication, maternal request is a sufficient medical indication for pain relief during labor. Pain management should be provided whenever medically indicated."[183]

Innovations in Obstetric Anesthesia

In recent years, there have been many innovations in obstetric anesthesia including drug combinations, dosing, and delivery systems. At the forefront of these advances is the goal of improving patient satisfaction while simultaneously reducing the overall consumption of local anesthetic and subsequent need for anesthetic intervention. For laboring women, studies have shown that patient-controlled epidural anesthesia (PCEA) is superior to fixed dose continuous infusion epidural (CIE).[170] In comparison to CIE, PCEA offers less analgesic consumption and need for anesthetic intervention. PCEA with background maintenance infusion improves overall pain control and decreases the need for unscheduled rescue boluses as compared to PCEA alone.[173]

Recent studies comparing programmed intermittent epidural bolus (PIEB) to CIE show that PIEB improves satisfaction, results in less anesthetic consumption while maintaining analgesia,[185] and may decrease motor block, an essential goal for obstetric anesthesia.[174]

6. Implement Intermittent Fetal Monitoring Policies for Low-Risk Women

The type of fetal monitoring, like other interventions, should be based upon the risk profile and needs of the woman. The vast majority of the low-risk NTSV population are candidates for intermittent auscultation or intermittent EFM, and the use of intermittent methods is supported by the AWHONN[160,186] and the ACOG.[137] The ACNM endorses intermittent auscultation as the preferred method for low-risk women.[138] *Table 13* outlines the requirements for intermittent EFM or intermittent auscultation as the default method of monitoring.

Table 13. Components of Successful Implementation of Intermittent Fetal Monitoring

Components of Successful Implementation of Intermittent Fetal Monitoring
Policies should include a risk assessment tool or checklist with exclusion criteria to assist in identifying women for which intermittent auscultation or intermittent EFM is appropriate[85]
Provide patient education for the use of intermittent methods of monitoring, including the risks and benefits of intermittent versus continuous methods, and engage in shared decision making in order to determine most appropriate method for each woman
Provide on-going assessments of women to determine appropriateness of continued intermittent methods versus conversion to continuous EFM[85]
Engage in initial and ongoing training and education of all nurses and providers on intermittent auscultation or intermittent EFM procedures
Provide appropriate staffing, e.g. 1:1 nursing care as recommended by AWHONN for intermittent auscultation in low-risk women[160]
Work with necessary committees and Information Technology (IT) to modify admission orders to reflect the use of intermittent EFM or auscultation as the default mode of monitoring for women who do not meet the exclusion criteria
Ensure that the appropriate equipment, such as Dopplers, are readily available in sufficient numbers
Develop a competency tool for evaluating knowledge of procedures and use of equipment