Did you know that the Cesarean delivery rate in China is 40-50 percent, among the highest in the world?¹,² Did you also know that many of these Cesarean deliveries could be avoided with the use of epidural analgesia?

With a focus on decreasing maternal and neonatal morbidity and mortality, Dr. Ling Qun Hu established the “No Pain Labor & Delivery – Global Health Initiative” to improve the delivery of obstetric anesthesia in China. Since its inception in 2008, the program has seen dramatic results. For example, at Shijiazhuang Obstetrics and Gynecology Hospital near Beijing, the epidural analgesia rate increased from 0 percent to 33.5 percent, while the total Cesarean delivery rate decreased by 10 percent over a two-year period.³,⁴

The complex interweaving of China’s history, culture and economy may explain the development of such a high Cesarean delivery rate. First, in an attempt to avoid labor pain, many women request a primary elective Cesarean delivery. Epidural analgesia is not available in most hospitals because anesthesiologists do not have much experience with it, and obstetricians are afraid of possible effects on the fetus. Second, many Chinese women want to choose the date and hour of their child’s birth because of ancient beliefs that certain numbers are luckier than others.⁵ For example, being born on the 8th is luckier than being born on the 4th, because the number 8 in Chinese rhymes with “fortune” while the number 4 sounds like the word for “death.” Third, many women believe that Cesarean delivery is safer than vaginal delivery. Finally, Cesarean delivery is more expensive; in large urban areas costing about $2,000 versus a vaginal delivery costing about $1,000.⁶

One recent real-life example highlights one of the reasons why the Cesarean delivery rate is so high in China. A Chinese woman was pregnant through in vitro fertilization and was...
requesting to give birth via Cesarean delivery. It was very difficult for her to get pregnant, requiring many cycles of IVF and she explained that she just did not want to deal with the “risks of a vaginal delivery.” The local obstetricians had no choice but to give in to her request, even though she had no medical indication. China’s politics probably influenced how this patient and her obstetrician came to the decision to have a Cesarean delivery: given the country’s one-child policy, there is extra pressure on parents and obstetricians to minimize the risks of birth trauma.

In an effort to educate about safest obstetric anesthesia practices, the No Pain Labor & Delivery – Global Health Initiative also brings simulation education of critical obstetric emergencies. Between June 15 and 21, 2014, Dan Drzymalski, M.D., and May Pian-Smith, M.D., brought high-fidelity, low-cost in-situ simulations to Liaocheng Women and Children's Hospital and Weixian Women and Children's Hospital, a few hours south of Beijing. Chinese obstetricians, anesthesiologists, and nurses participated in a STAT Cesarean delivery and an emergency postpartum hemorrhage. Checklists were also introduced. One year later, Weixian Women and Children’s Hospital saw dramatic changes in their obstetric ward: the Cesarean delivery rates dropped to nearly 30 percent, while the epidural analgesia rate rose to nearly 80 percent.

Simulation education has had an important impact on the quality of care delivered in Chinese hospitals. One important improvement was the uncovering of latent errors. For example, during the simulations, all teams encountered problems with safe patient transfer from bed to stretcher because the height of the stretcher could not be adjusted. During the post-simulation debriefings, members of the interdisciplinary teams all agreed that having an adjustable stretcher would be optimal. Another latent error discovered was that teams would forget to perform cricoid pressure for rapid-sequence intubation. Through deliberate practice in subsequent simulations, teams were able to improve upon these skills.

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Figure 1: Clinical Outcome Changes Before-After NPLD-GHI Visit in Weixian Remin Hospital

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Participants perform endotracheal intubation on a mannequin head during simulation drill.

Obstetric anesthesia is still an underappreciated anesthesia subspecialty throughout the world. In those countries with rapidly developing obstetric care, there are emerging opportunities for obstetric anesthesia to contribute to improvements in coordinated interdisciplinary care and in improved clinical outcomes. Through the No Pain Labor & Delivery – Global Health Initiative, millions of women can benefit from epidural analgesia and experience improved morbidity and mortality.

![Graph showing rates of vaginal delivery and episiotomy](image)

**Fig. 3. Rates of vaginal delivery and episiotomy.** The purple vertical line represents a lecture addressing episiotomy indications and complications.

**References:**

Dr. Drzymalski runs a facilitated debriefing in Chinese after the simulation drill is over.