

**6 Things You Must Do to Improve Perinatal Patient Safety:
How Training, Teamwork and Simulation Lead to Healthy Moms and Babies**
By Dr. Stan Davis

Graphics: Infographics will be used throughout to highlight key points

Her risk is yours

Every woman expects that the birth of her child will be one of the most joyous events in her life. The moment she sets foot in the hospital, she assumes, rightfully so, that every provider will protect her and her baby from harm.

Sadly, however, despite the best of intentions, things do go wrong. And when that happens, it can have lifelong implications for everyone involved, patient and provider alike.

Safety in numbers? Not in these

Adverse obstetric events occur in approximately 9% of all deliveries in the United States⁴ and it's estimated that 50% of these events are preventable.

A whopping 800 women die in childbirth each year in the U.S. In fact, in 2013, for every 100,000 live births, 18.5 percent resulted in maternal death, up from 12.4 percent in 1990.⁵

Perinatal asphyxia is a serious threat in newborns, and occurs in as many as 10 out of every 1,000 full term births.

Brachial plexus nerve injury occurs in as many as 5.1 infants for every 1,000 born. Another risk associated with brachial plexus injury is clavicle injury. Both are caused by mechanical forces, such as compression or excessive or abnormal traction during delivery.

Meconium aspiration syndrome is yet another serious condition which occurs in up to 10% of all births.^{5A}

Low Frequency/High Tragedy

We have conditioned ourselves to talk about these events without emotion. They're even dubbed *low frequency/high acuity*.

Yet a more appropriate term is low frequency/high tragedy. The emotional toll that these types of outcomes can have on patients and their families is immense. Plus, for the doctors and nurses involved, the shame, guilt and self-doubt they experience can cause irreparable harm to their reputation and can impact their future job performance.

Injuries to OB's are real too and are estimated to make up 43% of all malpractice claims exceeding \$5 million. Those that have involved neonatal birth brain injury have been found to account for loss payouts of \$1.1 million. For every delivery in the U.S, estimates show that \$154 is required just to cover litigation losses.⁶

Settlements are binding but statistics don't have to be.

The good news is that we can beat these saddening statistics. Research shows that hospitals that follow **six evidence-based perinatal care practices**, along with the deliberate practice of simulation can achieve the following:

- Reduce adverse obstetric events by as much as 18 percent.⁷
- Reduce birth trauma incidents by as much as 30 percent.⁷
- Reduce birth hypoxia and asphyxia by as much as 43 percent.⁷

Here's how.

1. Implement a shared team model

Poor teamwork and communication that leads to patient harm are responsible for up to 70 percent of all malpractice claims in the U.S.^{7A}

One of the reasons is due to how our care model has changed. Oftentimes, the physician is no longer the only source of information and care for the patient. Now, we bring together groups of highly skilled and diverse providers to share in the patient's care. A team of experts however, doesn't automatically constitute an expert team. They need and deserve training in a shared team model.

TeamSTEPPS, which was developed by the Department of Defense and the Agency for Healthcare Research and Quality (AHRQ), is a model that has been shown to be effective in improving collaboration and teamwork.

TeamSTEPPS is comprised of 4 concepts:

Leadership. Leaders initiate and coordinate team events such as briefs, huddles, and debriefs.

Situation monitoring allows both individuals and teams to assess their environments and work together to deliver optimal care.

Mutual support. Using various methods and rules, teams are efficient, resolve conflict and provide feedback for improved care.

Communication. Strategies such as SBAR (Situation, Background, Assessment, Recommendation), and closed-loop communication assure reliability and foster a

cohesive team by improving a shared mental model and creating accountability.

TeamSTEPPS is not a hard model to grasp yet it deserves to be practiced and rehearsed before it can be applied in a patient care setting. What's more, the use of simulation to teach the principles of teamwork and communication is a powerful tool to create highly functioning individuals and teams.

2. Extend that model across teams.

One of the most dangerous stages in the process of care for a mother and a newborn is during handoffs.

Handoffs refer to the transfer of information, authority and responsibility as the patient transitions through the continuum of care.

Handoff failures and poor communication have been identified by the Joint Commission as contributing to approximately 2 out of every 3 sentinel events. Plus, the Institute of Medicine (IOM) is emphatic in concluding that, "it is in inadequate handoffs that safety often fails first."

The transfer of information, authority, and responsibility should take place in the context of a team framework that all teams are accustomed to. In obstetrics, having both the mother and the baby who have similar histories but different care paths can be challenging to safe handoffs.

TeamSTEPPS sets the expectations for creating a shared mental model and offers tools for precise communications that enable handoffs and other important transitions to occur smoothly and efficiently even under high-pressure situations. Tools like SBAR, Check Back, CUS (I'm Concerned, Uncomfortable, this is a Safety Issue), Huddle, Brief, and others can make all the difference in keeping patients safe and reducing risk.

Simulating handoffs will strengthen the team's skills and give them the confidence so they can use these tools as second nature during a crisis situation.

3. Use evidence-based care bundles.

Evidence Based Processes (EBP) are vital to patient care. Not only do they represent the current understanding from the literature but also they decrease variability in care, which leads to reliability and safety.

Care bundles, which are used in many settings, are groups of evidence-based processes related to the patient's care that when performed together result in better outcomes.

Although they are not checklists, care bundles should be approached in a step-by-step manner to ensure a consistent process. The Institute for Healthcare Improvement (IHI) has helped to develop bundles for perinatal care including elective induction,

augmentation and vacuum delivery.⁸

Let's look at augmentation as one example. Augmentation is risky business. It involves Oxytocin, deemed by some to be one of the most dangerous drugs used. Evidence shows that approximately 50% of all malpractice cases involve the use of oxytocin⁹.

To address oxytocin risk, the augmentation care bundle makes it imperative that 4 factors be measured/monitored during the birth process. Leaving just one out breaks the integrity of the care bundle.

- 1. Fetal weight.** Estimating fetal weight is important to know even before administering oxytocin, since it helps determine if augmentation is even appropriate for the size, condition, and/or gestational age of the baby.
- 2. Fetal heart rate.** Monitoring fetal heart rate is essential to the safety of the baby if there is an attempt for a vaginal delivery.
- 3. Pelvic assessment.** The dilatation, station and presentation help to assess the likelihood of vaginal delivery.
- 4. Tachystole.** Monitoring and managing uterine tachysystole will help indicate whether the uterus is contracting too much and whether augmenting with oxytocin should be continued. Simulation can help ensure bundles are employed and provide insight into why harm may occur. For example, a shoulder dystocia drill will provide much better instruction when combined with the clinical care processes that when omitted may cause harm.

4. Apply care bundles on an all-or-nothing basis.

According to a report from the University of Minnesota and Premier, Inc., 14 hospitals who participated in the Premier Perinatal Safety Initiative (PPSI), a program which uses care bundles, saw a reduction in adverse events and patient harm, malpractice claims and associated liability costs, all while significantly improving the delivery of clinical care bundles to patients over a 5 year period. Plus, primary cesarean section rates decreased and VBAC rates increased, likely the result of communication and teamwork.⁷

It's not the bundles alone that improve patient outcomes, but the team's ability to implement every element of the bundle for all patients unless it's contraindicated. By using this ***all or none approach*** the staff can understand how reliable the bundle is and be motivated to make improvements when necessary.

Simulation is a very powerful way to employ or re-evaluate a bundle while creating understanding and motivation. Practicing the use of care bundles during simulation can help make monitoring/measuring the various risk factors a natural and familiar process. With approximately half of malpractice cases involving the use of oxytocin, investing the time and effort in simulation is a precaution you will not regret.

5. Assess and address your team's performance.

Both perinatal patient safety and the likelihood of perinatal patient risk can be assessed in many ways, but because of the large amount of information and the types of strategies available, the workload can be overwhelming.

The Agency for Healthcare Research and Quality (AHRQ) has developed a system to make it easier. The Comprehensive Unit-Based Safety Program (CUSP) integrates the many initiatives including TeamSTEPPS, Six Sigma, PDSA cycles, Root Cause Analysis (RCA), and Just Culture, among others. ¹⁰

Other aspects of assessment look at outcomes, which can be measured by AHRQ's Patient Safety Indicators (PSI) data and the Adverse Outcome Index (AOI) that measure maternal and neonatal harm using administrative data.

Identifying perinatal risk should be a regular, scheduled event and be evaluated on an ongoing basis in order to standardize processes whenever possible.

Using simulation, teams can more fully understand how maternal and neonatal injury occur and subsequently find ways to improve outcomes.

Simulation is a convenient tool. It provides a safe environment where staff members can make mistakes and learn from those mistakes without risk to a patient.

6. Don't let failure be an option.

“What saves a man is to take a step. Then another step.” This rings true in the world of perinatal patient safety too.

One of the most common and effective ways for teams to adapt to their new environment is a Plan-Do-Study-Act (PDSA) cycle. Here's how it can work using simulation:

Plan out the scenario with learning objectives and outcomes that make sense.

Do the scenario.

Study using data and debriefing how the actions taken during the scenario worked.

Act in a way that will integrate learning on the job and maintain the improvements.

The beauty of this approach is its simplicity. Plus, most people have come across it formally or informally during their careers. Use simulation with PDSA cycles and you will quickly see how constant monitoring and experimenting with new ideas can pay off for perinatal care.

Every birth deserves to be a wonderful and celebrated experience for the mother, her baby, and for the individuals and teams who care for them. Every birth deserves to be celebrated by you too.

Thank you for your role in helping to improve perinatal patient safety.

Additional information.

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ü 6.54 claims expected by AON hospitals per 10,000 births 2013
Zurich also has a closed claim study with good information
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