

Labor & Delivery Simulations

Improve Teamwork, Communication, and Safety

By Scott P. Edwards



Nancy Rines, RN, manager of the Labor/Delivery/Recovery/Postpartum Unit, and Molly Gray, RN, director, Women's and Children's Services, agree that integration of the team and its communications is essential.

A number of obstetrical initiatives at Baystate Medical Center are creating a culture of safety aimed at preventing adverse outcomes.

The 28-year-old woman's labor and delivery proceeds normally. At 3:35 pm, she delivers an 8-pound, 4-ounce baby boy. Moments later, she suffers a postpartum hemorrhage, bleeding profusely onto the bed. Her blood pressure drops, and she is not speaking clearly. Her husband is frantic. An alert goes out and a team of nurses and doctors rushes in. A call from the labor and delivery room is made to the unit clerk to order blood, but there is no clerk at the desk. The tension builds.

A real-life scenario? Perhaps, but at Baystate Medical Center, this scene was part of an *in situ* labor and delivery simulation aimed at improving teamwork, communication, and crisis management skills for the nearly 235 health care professionals who make up the labor and delivery staff.

“Our main goals are communication and team performance,” says Andrew Healy, MD, the Baystate Maternal-Fetal Medicine specialist who oversees the simulations. “You can have exceptional individuals, but in the team environment, you sometimes see suboptimal performance due to poor communication.”

Perinatal Safety

The simulations—called *in situ* because they're conducted in the actual labor and delivery environment rather than a simulation lab—came about through the Department of Obstetrics & Gynecology's involvement in the Premier Perinatal Safety Initiative, run by Premier Insurance Management Services, Baystate's secondary insurer. The initiative is a 21-month national collaborative effort designed to “achieve consistent delivery of evidence-based care with the goal of eliminating preventable birth-related injuries and deaths.”

According to the National Center for Health Statistics, leading causes of maternal death associated with child-birth include pulmonary embolism, pregnancy-induced hypertension, and hemorrhage. The most common clinical issues responsible for the majority of perinatal harm are:

- failure to recognize an infant in distress;
- failure to initiate timely Cesarean birth;
- failure to properly resuscitate a depressed baby;
- inappropriate use of labor-inducing drugs; and
- inappropriate use of vacuum extraction or forceps.



After a simulation, there is a debriefing with the team as they watch the video.

Serious adverse events during labor and delivery can impose a heavy physical, psychological, and financial toll on families, providers, and the community.

The Baystate simulations focus on closed-loop communication, in which orders are called out to labor and delivery personnel and repeated back to the individual who issued the order. “This is important in the clinical setting, especially during an emergency when people are constantly calling out orders,” says Dr. Healy.

The simulations, which are videotaped, begin with a discussion among the facilitators and a small group of participants about the program's goals and a brief clinical scenario. Participants typically include an attending physician, two residents, and two or three nurses; anesthesia and other services are called in as needed.

As the scenario begins, the night nurse transfers the care of the patient (an actor) to the day nurse. Then an

event occurs, and the labor and delivery team performs its various routines, minus any intrusive procedures like pelvic exams or needle sticks, to handle the emergency. The actor/patient is given instructions, such as “pass out,” to move the scenario in a certain direction.

After the simulation, there is a debriefing with the team as they watch the video. Each team member is asked to comment on what they did well and what could be improved upon. “People are amazed at what they thought happened and what actually happened,” says Dr. Healy.

The goal of the simulations, he adds, is not to examine technical efficiency, but to assess the team’s communication skills and how well they manage crisis situations. For example, when a new person comes into the room, how well are they briefed on the situation? How accurate is their hand-off? Do they use SBAR (Situation-Background-Assessment-Recommendations)? How are orders and instructions processed and filled during all of the activity?

“As health care continues to improve, obstetric emergencies occur less often,” says Dr. Healy. “As a result, team members may have less experience in managing them. During these difficult times, communication must be clear, precise, and effective. Our simulations help to optimize the care of patients in these difficult and potentially life threatening situations.”

Following the debriefing, Baystate’s OB Safety Committee meets to discuss any policy or systems changes that need to be addressed.

Practice Essential

During a crisis, a labor and delivery team might become stuck on a particular issue and fail to see other important aspects of the problem. With practice, teams become better able to step back and assess the entire situation.

“Emergencies do occur in obstetrics,” say Molly Gray, RN, director, Women’s and Children’s Services.

“Fortunately, they are rare, but when something does go wrong, it can go very wrong quickly. *In situ* simulations allow us the opportunity to link evidence-

Maternal-Fetal medicine specialists Drs. Andrew Healy (center) and Glenn Markenson (right) and Nancy Rines, RN, note that the labor and delivery simulations are helping to engender a “culture of safety” that actively engages staff.



based practice to the best type of team interaction. Communication between team members is key.”

Nancy Rines, RN, manager of Baystate’s Labor/Delivery/Recovery/Postpartum Unit, agrees. “We stress situational awareness, and we flatten the hierarchy. Everyone involved in the care of the patient has a voice, even the most junior member of the team.”

“Everyone’s input is important and valued,” continues Ms. Gray. “We strive for integration of the team and its communications.”

The Baystate simulations have helped identify labor and delivery practices and process issues that have since been improved. For example, several bleeding scenarios identified obstacles to getting blood products and specific medications to patients as efficiently as possible, so the group developed kits on each labor and delivery pod for bleeding emergencies.

Dr. Healy says these simulations also allow the labor and delivery staff to uncover process issues they would not encounter during simulations in a lab, adding, “As communication skills improve, so too will our ability to minimize maternal and perinatal harm; the more we practice challenging scenarios, the more skilled we will become at managing them.”

Culture of Safety

In addition to the Premier collaboration, Baystate’s *in situ* labor and delivery simulations are also part of the hospital’s broader OB Safety Initiative, an effort to develop the safest environment possible for the care of mothers and infants. In addition to the simulations, a number of practice interventions developed through the OB Safety Initiative have led to significant decreases in birth/neonatal traumas and maternal events, including:

- The development of Shoulder Dystocia and Electronic Fetal Monitoring Competency Based Learning Modules for nurses, certified nurse-midwives, and physicians as part of the skills validation and credentialing process.

- Implementation of IPROB (Intelligent Patient Record for Obstetrics), an electronic decision support system customized with Baystate’s policies and standards of practice for all obstetrical patients.
- Adoption of oxytocin and vacuum bundles that guide care to meet both American College of Obstetrics and Gynecology and the Association of Women’s Health, Obstetric and Neonatal Nurses standards of practice.
- Work to eliminate elective deliveries less than 39 weeks.
- Formalized “TeamSTEPPS” (Strategy and Tools to Enhance Performance and Patient Safety) training for all physicians, nurses, and ancillary staff. This includes “debriefings” after emergent situations.

“Through these initiatives,” says Glenn Markenson, MD, chief of Maternal-Fetal Medicine, “we’re not just saying we provide safe care; we’re proving we provide safe care.”

Drs. Markenson and Healy say it is too early to determine how the labor and delivery simulations affect quality and safety, but that they are helping to engender a “culture of safety” that actively engages staff.

“By practicing certain situations,” says Dr. Markenson, who developed the simulation program, “our staff feels under control during emergencies: we’ve done it before, we can do it again. It’s like football, where you run a play over and over again in practice so it becomes second nature during a game.”

“Through the excellent work of the Maternal-Fetal Medicine team and many others, we are very gratified to be recognized as one of the safest hospitals in the country,” says Evan Benjamin, MD, senior vice president Healthcare Quality and chief Quality Officer, Baystate Health.

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