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Interdisciplinary Team Training: Five Lessons Learned

Communication and teamwork improved on this labor and delivery unit.

In 1999, the Institute of Medicine published *To Err Is Human: Building a Safer Health System*, which offered a stunning indictment of the health care community.[1] It cited preventable medical errors, including failures in communication and teamwork, as the cause of up to 98,000 patient deaths annually. The report recommended that interdisciplinary team training programs be implemented in hospitals to improve communication and coordination among staff.

In team training, instructional strategies such as simulations, lectures, and videos are used to teach staff "teamwork competencies"—the knowledge, techniques, and attitudes they'll need to work together successfully.[2] For several decades, high-risk industries, such as aviation and the military, have relied on team training to reduce errors and improve safety. In the health care industry, however, team training has only started to gain momentum in recent years, primarily in high-risk clinical areas, such as anesthesiology, emergency medicine, and obstetrics.

Gaba and colleagues pioneered the adaptation of "crew resource management," a form of team training created by the aviation industry, for managing anesthesia emergencies.[3, 4] The MedTeams project, a crew resource management–based team training program designed to study the effectiveness of this type of training in EDs, showed statistically significant improvements in teamwork behavior and attitudes and, most importantly, in the reduction of clinical errors.[5, 6]

Labor and delivery units are complex, dynamic environments in which change can happen quickly and unexpectedly. Early recognition of potential complications and immediate, collaborative, corrective action are required to avert disastrous outcomes for women and babies. Current statistics on obstetric adverse outcomes, however, indicate that critical skills may be lacking.

The Centers for Disease Control and Prevention reported approximately 13.3 maternal deaths per 100,000 live births and 4.45 neonatal deaths per 1,000 live births in the United States in 2006,[7] exceeding the U.S. Department of Health and Human Services' Healthy People 2020 goals of 11.4 maternal deaths per 100,000 live births and 4.1 neonatal deaths per 1,000 live births.[8] Yet maternal deaths represent only a small portion of pregnancy-related problems: Callaghan and colleagues estimate that for every woman who dies of pregnancy-related complications, 50 more suffer severe morbidity.[9]

It's difficult to quantify how many maternal deaths can be prevented—each event is unique and needs to be examined separately, with all possible causes carefully considered.[10, 11] However, a study of all pregnancy-related deaths in North Carolina from 1995 to 1999 determined that 40% were potentially preventable.[12] Furthermore, a British report, *Why Mothers Die: 2000–2002*, revealed that substandard care was involved in more than half of maternal deaths and noted that a "lack of communication and teamwork both within the obstetric and midwifery teams and in multidisciplinary teamworking" contributed to the substandard care.[13]

IMPLEMENTATION OF THE TRAINING

In 2008 senior management at NYU Langone Medical Center embarked on establishing crew resource management at our large academic medical center in Manhattan. In response to the strong evidence supporting team training in obstetric care—and a perceived lack of communication and teamwork among our labor and delivery unit staff—management

decided to begin a pilot program in this department, which has more than 4,000 deliveries a year.

We used the core curriculum of the Team Performance Plus program developed at Beth Israel Deaconess Medical Center's obstetrics department in Boston.[14] A steering committee was formed to develop the initiative, and its members were chosen for their expertise and ability to lead the implementation of this program. They consisted of obstetric nursing and medical leaders, senior hospital administrators, and the clinical nurse specialist on the unit. Consultants from the Team Performance Plus program were brought in to educate steering committee members about the program and to help create an educational plan for the staff. The labor and delivery unit's assistant nurse manager (one of us, FC, who is now the nurse manager) led the implementation of the program with the assistance of the clinical nurse specialist and a well-respected physician.

Teamwork techniques and skills were incorporated into the unit routine.

Five nurse–physician teams led training on the unit, educating staff and modeling team behaviors. These nurses and physicians were paired to enhance interdisciplinary collaboration and to ensure that both the medical and nursing staff were equally committed to the process. All staff attended group classes that emphasized the key principles of team training: communication, leadership and teamwork, a shared mental model, and error prevention (see Table 1[14, 15]). There they learned techniques and skills such as "close the loop" and the "2-challenge rule"—the former is used to confirm a staff member's understanding of the information exchanged, and the latter is a conflict management technique in which staff members voice patient safety concerns at least twice if these haven't been satisfactorily acknowledged at first. After everyone had completed the classes, we held a celebration attended by all staff on our unit to launch our effort to create a new culture of consistent communication and teamwork.

Teamwork techniques and skills were incorporated into the unit routine and consistently reinforced by leadership on the unit. For example, if a patient's status changed, instead of multiple clinicians discussing it separately—the nurse speaking with the obstetrician, the obstetrician speaking with the anesthesiologist—all involved staff would "huddle," a technique they'd learned through training, to discuss the situation. During the next 12 months, efforts like these led to a successful change in our unit

culture. Throughout the day, nurses could be seen calling huddles with obstetric care providers when patient status changes or safety concerns arose.

Along the way, we learned five lessons we believe are essential for successful implementation of a team training program:
- the importance of senior management support
- the need for dynamic leadership
- ensuring that all staff members are included
- being prepared to overcome resistance
- sustaining change after the initial implementation process

These lessons are not specific to labor and delivery but are applicable to any hospital unit attempting to establish a team training program.

Senior management support is central to initial and sustained change.[16] Implementing team training demands a change in an organization's culture and a financial investment, both of which are dependent on the support of senior management.

Team training breaks down the traditional hierarchy of leadership. All members of the team are expected to challenge decisions and raise questions about actions they believe could jeopardize the delivery of safe patient care. Team members will be unlikely to do this if they're not confident senior management supports this change to the established hierarchy. It's also important that team members can invoke the support of senior management as they emphasize that everyone involved—staff and private practice physicians alike—will participate fully in the team training approach.

When the senior management of NYU Langone Medical Center first approached the nursing and physician leadership of the obstetric service about initiating team training, they envisioned the staff attending team training classes only. However, once we researched the concept, we realized that a more comprehensive approach was needed if we were to achieve the level of teamwork necessary to change the culture of our unit.

A comprehensive approach required initial and ongoing budgetary support. Initially, we paid the consultants, the staff for their attendance at the training classes, and for administrative assistance and training materials. During the implementation of the program, however, we discovered that we needed additional equipment, supplies, and staff. The small central fetal monitoring screens were replaced with large screens that are easily visible to all staff. And we created a medical safety officer position, an obstetrician present on the unit around the clock whose sole responsibility was to promote patient safety. The safety officer oversees and maintains patient safety by intervening when potentially unsafe situations arise. For example, when a patient is experiencing adequate uterine contractions and an obstetrician gives an order to increase the dosage of an oxytocin infusion—thereby increasing

Table 1. Team Training Principles and Techniques[14, 15]

Key Principles	Techniques and Skills	Description
Communication	SBAR	Reporting format used routinely to offer relevant information about patient status
	Close the Loop	Technique used to confirm a staff member's understanding of the information exchanged (during task delegation, for example)
	DESC	Technique used in conflict management
	2-Challenge Rule	Technique used in conflict management to voice patient safety concerns at least twice if not satisfactorily acknowledged the first time
	CUS	Patient safety issues are voiced first by using the word "concerned"; if this isn't acknowledged, the word "uncomfortable" is used; if still unacknowledged, the word "scared" or the phrase "patient safety issue" is used
	Stop the Line	A phrase understood by everyone to indicate a safety concern that needs to be addressed immediately; not said in front of the patient
Leadership and Teamwork	Team Structure	Leader ensures team members know their roles
	Team Meetings	Leader ensures all team members attend team meetings for patient status and plan of care updates
	Huddle	An exchange between two or more team members to share information, solve problems, and close the loop; can be called at any time by anyone
	Briefing/Debriefing	Event-focused meeting to preview or review a procedure immediately before or after the event
Shared Mental Model	Situation Awareness	Knowing what is occurring throughout the work environment
	Situation Monitoring	Actively scanning the work environment to assess patient status and team function
Error Prevention	Workload Management	Delegation; leader ensures workload is distributed appropriately among team members
	Mutual Support	Team members look out for each other; request or offer assistance
	Escalation/Chain of Command	Request supervisor input and assistance; continue to escalate until patient safety issue resolves

CUS = concerned, uncomfortable, scared/patient safety; DESC = describe, express, suggest, consequences; SBAR = situation–background–assessment–recommendation.

the risk for uterine rupture and fetal heart-tracing changes—the safety officer is responsible for speaking up. This person also provides assistance to other attending physicians when emergencies occur. The safety officer, for instance, would be called immediately to help in the event of a shoulder dystocia.

During the planning phase of the program, nursing and physician leadership presented senior management with a detailed business plan that included a cost–benefit analysis demonstrating the positive outcomes we expected from a successful team training program. These included higher satisfaction rates among staff and patients, leading to higher retention rates and lower costs; savings from decreased use of travel and per diem staff; and, most important, greater patient safety, which was expected to decrease length of stay and lead to fewer adverse outcomes.[17-20] An additional financial incentive was that our facility's malpractice insurance company offered a discount on premiums for hospitals with team training programs, translating into a significant savings at our facility. We also highlighted how a comprehensive team training program would support NYU Langone Medical Center's stated mission to provide patient-centered, collaborative, safe care and promote its core values of excellence, respect, teamwork, integrity, and caring.

Leadership. Implementing team training requires a leader who is highly committed to the process and has a strong presence on the unit. The leader must be a champion for the program who can generate enthusiasm among the staff and be resolute in insisting

that everyone adhere to team training principles. On our unit, this person was the assistant nurse manager.

We found it instrumental that our leader was in a position of authority and was comfortable setting expectations—and that she could follow through if expectations were not met. It was an obvious decision to make the assistant nurse manager the facilitator of twice-daily team meetings, because the staff and physicians already looked to her to help coordinate patient activities throughout the day. Moreover, because the assistant nurse manager was already in a position of leadership, meeting attendees were not offended if she redirected the flow of the discussion or eliminated conversations taking place among only a few members of the staff. The leader must have the skills and knowledge to manage the entire process—securing rooms for the classroom teaching, scheduling staff to attend these classes, and ensuring that everyone completes the program's training sessions.

The team meeting gave staff members the opportunity to use their voices in a group setting.

It was especially important early in the program that the leaders were highly visible, reinforcing the change in the unit's culture and guiding staff in executing the team training principles. The nurse leader spent time on each shift, observing how these principles were applied and offering suggestions for improvement. If, for example, she discovered a lack of communication between the charge nurse and delivering physicians, she could call a "huddle," directing their discussion while encouraging each staff member to use the "close the loop" technique or the SBAR (situation–background–assessment–recommendation) reporting format to offer relevant information about patient status during decision making.

All team members need current information about unit activities, patients, staffing, and environmental needs, which is why we instituted twice-daily team meetings. In addition to running these, the nurse leader also made sure everyone attended, if necessary seeking out staff members who hadn't arrived on time and bringing them to the meeting room. As the moderator of these meetings, she ensured that everyone participated and encouraged input from those who might typically be less vocal.

An essential quality of leadership is perseverance. Successful implementation of team training requires consistent adherence to its principles for months, not days or weeks. The leader must provide continual reinforcement in the form of positive feedback to those following the program and a clear explanation of the consequences to staff members or physicians unwilling to participate. Participation in this program became part of staff members' performance appraisals, and medical privileges were dependent on full participation (another area in which senior management's support was crucial).

Involving all staff members. Regardless of job position, every staff member was required to participate in this program. This was essential to our success in adopting team training principles on our unit. We recognized from the beginning that the labor and delivery team extended far beyond the patient's bedside. Educational sessions delivered by an interdisciplinary team were deliberately planned so that staff from a variety of departments were at each session, including housekeepers, unit secretaries, admitting personnel, nurses, obstetricians, NPs, midwives, and anesthesiologists.

The twice-daily team meetings offered all outgoing and incoming staff the chance to communicate as a group at the start of each shift. These gatherings ensured that everyone was up to date on clinical issues and hospital initiatives as well as patient status. Although the charge nurse from the outgoing shift led the discussion, all staff members were encouraged to offer any information pertinent to the plan of care.

In addition to being a powerful venue for discussing patient status during a shift change, team meetings had the added bonus of creating cohesion and bonds among those working on the unit. The staff came to know each other on a more personal basis, often sharing announcements of important events, such as engagements, births, and deaths. While not originally designed for this purpose, the team meeting gave staff members the opportunity to use their voices in a group setting. Many staff members talked about how the meetings increased their self-confidence and job satisfaction. Bringing the entire unit together twice a day reinforced the need for teamwork and communication among all staff members.

The confidence these team meetings instilled in the staff—and an example of how this can lead to better care—was illustrated one day when the unit was told that a woman pregnant with triplets was about to be admitted. A member of housekeeping approached the charge nurse with an action plan before the unit clerk had even hung up the phone with the admitting doctor. The housekeeper knew from a previous meeting that only one labor room had a fetal monitoring system capable of accommodating triplets. He suggested that the charge nurse move the patient presently in that room to another, allowing him time to clean and prepare the room before the new patient arrived on the unit. His quick thinking helped us to avoid a delay in care for this high-risk patient.

Overcoming resistance. Resistance to change occurs because those involved don't see the change as beneficial, don't view the benefits as being greater than the sacrifices, or aren't involved in the creation of the change.[21] On our unit, no one initially recognized the value of the team training program. Some of the nursing staff believed the current culture was too entrenched and didn't think the effort required of training would pay off. Some physicians feared losing autonomy in a team training approach or didn't believe the program had anything to teach them about teamwork and communication.

We used several strategies to overcome this resistance. One of the most effective was thinking creatively about how we should structure the training classes. Knowing the staff would approach the four-hour classes reluctantly and expect the typical lecture and PowerPoint presentation, we built the sessions around "ice breakers" (activities designed to get participants out of their seats and interacting with others), role playing, and humorous media clips. With senior management's financial support, we also offered incentives, such as meals during the sessions and reusable lunch bags that had quotes about teamwork written on the front.

It also helped that the team training philosophy addressed the staff's concerns about safety and communication on the unit. Prior to team training, it was not uncommon for the nurse and physician leadership to field complaints about lack of teamwork. Each discipline blamed the other for a troubled workflow or for patients not receiving the care they deserved. With the increased communication stressed in team training, health care providers were encouraged to talk through their problems, for instance, in a huddle. As the first sessions ended, participants spoke positively about the training to their colleagues, generating enthusiasm for the program.

One way we kept this enthusiasm going on our unit was with the use of posters featuring team training principles along with photos of the labor and delivery staff illustrating these principles. One poster highlighted the communication tool "CUS" (concerned, uncomfortable, scared/patient safety), showing a photo of the staff engaged in a serious conversation. Its purpose was to remind staff to use proper terminology when reporting a safety concern. Putting up personalized rather than preprinted posters around the unit was more effective at drawing the staff's attention to the project and in promoting excitement about it. It also created a sense of accountability among the staff regarding the message being portrayed, especially among those whose photo appeared on a given poster.

We also addressed scheduling concerns voiced by the physicians, many of whom didn't want to cancel their office hours for the four-hour training session. Additional classes were scheduled in the evening, so they could attend without missing their office hours. We also made sure scheduling didn't create a problem with hospital-based staff. Nurses and other staff members attended classes during regular work hours whenever possible, with additional staff brought in to cover for them. In the few instances in which someone needed to come in on their day off, overtime was paid or they were released early from a future shift.

Some of the physicians were eligible to receive a discount on their malpractice insurance premiums for participation in the team training program—the same incentive that had been offered to the hospital. Additionally, a well-respected physician took the initiative of leading the program along with the assistant nurse manager and clinical nurse specialist. Knowing this was an interdisciplinary collaboration and that one of their colleagues was a leader of this program went a long way toward convincing the physicians of its value.

Sustaining change. Our work wasn't finished after the initial implementation of this team training program. Without ongoing reinforcement and support, team behaviors will deteriorate over time.[22] After implementing the program, leaders on the unit continued to work daily to reinforce essential teamwork and communication behaviors. They consistently reinforced the principles, set expectations, held staff accountable, and generated enthusiasm. They continued to be present at the beginning and end of each shift to make sure all team members attended team meetings and encouraged everyone, from nurses to housekeepers, to participate. Over time, these actions created a higher standard for safety and teamwork on the unit. The four-hour training class is now a required part of orientation for new staff members, with the importance of safety on our unit made clear from the start of employment.

Without ongoing reinforcement, team behaviors will deteriorate over time.

During a follow-up visit last year, the consultants recommended that we provide a two-hour refresher course to counteract the tendency of staff to return to their previous behaviors. Along with reviewing the key components of team training during this refresher course, we engaged staff members in a discussion of the changes they'd observed on the unit as a result of team training. Many pointed out the benefits of having a safety officer present at all times. This 24-hour coverage allowed staff to voice patient safety concerns and to know that the safety officer would address

these immediately. The staff also viewed the twice-daily team meetings as an opportunity to come together each morning and evening to begin the shift as a team.

In addition to staff members' reflections, we'd prepared our own list of positive changes, highlighting the effectiveness of team training. One example was the initiation of our obstetric response team, a group of care providers on each shift designated to respond to maternal hemorrhages. All staff members are empowered to call this team at their discretion, without needing physician or nursing leadership approval. Staff members were also encouraged to generate ideas to further promote teamwork. The combination of seeing positive change on the unit and reflecting on how to keep encouraging such change keeps the momentum of team training alive.

SAFETY AND COLLABORATION

When we began the team training initiative, the National Perinatal Information Center provided us with an adverse outcome report, which is a retrospective review of perinatal safety data on our unit. The data included indicators of unplanned ICU admissions, maternal transfusion rate, birth trauma, and low Apgar scores. We continue to receive this report quarterly. Major patient safety indicators, such as the number of maternal and intrapartum neonatal deaths and the rates of uterine rupture, have always been very low on our unit, and we've found that this hasn't changed since the implementation of team training. Unplanned admissions to the ICU and the rate of maternal transfusions have increased, however, but this was an expected positive outcome of team training related to better recognition of problems and earlier intervention.

Staff members continue to express satisfaction with the team training approach. As one nurse explained, "It doesn't leave you out there when an issue arises. You can call the team together and make a decision that's best for everyone. It's great knowing you're not alone, that everyone is aware of what is happening with all the patients." They report improved communication with obstetric providers and a higher level of respect among the different departments and disciplines. Staff regularly use the team training communication tools, such as close the loop and the 2-challenge rule, when patient safety issues arise. Most importantly, they feel empowered to influence the safety and quality of patient care delivered on the unit. ▼

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