TCAB in the Curriculum

Creating a safer environment through nursing education.

By Deborah Struth, MSN, RN

In a recent study, 89% of deans and directors of prelicensure professional nursing programs agreed with the following statement: "Overall, graduate nurses are fully prepared to provide safe and effective care in the hospital environment." But only 10% of hospital nurse executives reported being comfortable with new graduates' ability to provide safe and effective care.[1]

Forging a strong partnership between practice and education became part of the Transforming Care at the Bedside (TCAB) vision in June 2006. The 10 hospitals participating in phase 3 of the TCAB initiative of the Institute for Healthcare Improvement (IHI) and the Robert Wood Johnson Foundation (RWJF) each invited an academic partner to join the TCAB community. The University of Pittsburgh Medical Center (UPMC) Shadyside School of Nursing was one of those academic partners.

We realized that transformational leadership, prototype, tests of change, and rapid-cycle improvement had to be more than just words in a presentation. Nursing faculty needed to embrace the TCAB framework before transformation could begin. Our task as an education partner was to develop structured learning activities to teach prelicensure (student) nurses about TCAB. This article describes how our faculty developed clinical and didactic curricula to do this. Our work made the TCAB design targets related to safe and reliable care, value-added care, and patient-centered care come to life for our students.

THE EDUCATION PARTNER'S WORK BEGINS

Any faculty member interested in learning about TCAB and becoming active in the process could join the TCAB team at the UPMC Shadyside School of Nursing. We met every Thursday afternoon. Twelve faculty members consistently attended the meetings.

Incorporating TCAB into faculty work. Several issues arose immediately. First, about one-third of the team's members were uncomfortable with their knowledge of performance improvement methodologies. We arranged for a lecture and an interactive computer-based learning module to relate these methodologies, but they only slightly improved the comfort level. Team members felt that they needed to adopt the TCAB performance improvement methods, such as observation and tests of change, into their daily operations as faculty members to fully experience TCAB.

The TCAB team therefore took the test of change flowchart, which helps map the process, to the entire faculty. The team explained that before making any change in any course, a test of change would have to be developed and presented to the faculty for discussion. The curriculum committee would then review the change before testing. The entire faculty had to evaluate the test of change and recommend whether it should be adapted, adopted, or abandoned.

Focusing on safe and reliable care. The second issue for the TCAB team was where to begin developing the teaching and learning activities for the nursing education program. Maureen White, RN, chief nurse executive from North Shore–Long Island Jewish Health System in New York and a member of the TCAB learning community, met with us and challenged us to create curricula that would produce nurses who could lead change from the bedside. A graduate of such a program would be familiar with the concept of system errors and possess the communication and performance improvement skills necessary to participate in developing processes that would improve the care environment on medical–surgical units.

The TCAB team decided to focus our initial projects on safe and reliable care. What competencies are required and how do we teach them? The Quality and Safety Education for Nurses (QSEN) project, funded by the RWJF, provided the framework to answer this question. QSEN researchers used nursing literature and recommendations from Institute of Medicine reports to define quality and safety competencies for all nurses. We received a copy of the QSEN work in progress at the October 2006 TCAB learning community meeting. The competencies QSEN identified were patient-centered care, teamwork and collaboration, evidence-based practice, quality improvement, safety, and informatics.[2] Each competency outlined knowledge, skills, and attitudes a nurse had to demonstrate. (A complete explanation of QSEN along with teaching and learning activities can be found at www.qsen.org.)

Setting goals. Next we set goals for the first year of our TCAB journey.

- Redesign the foundation (introductory) level of the nursing education program to emphasize effective communication, using the following:
  ‣ crew resource management (CRM) principles. CRM is a training system developed by the aviation industry to address teamwork and communication.[3]
  ‣ situation–background–assessment–recommendations (SBAR) communication, a structured model for communicating patient information.[3, 4]
  ‣ the relevant knowledge, skills, and attitudes identified by the QSEN's safety and teamwork and collaboration competencies.
- Develop immersing, learner-focused educational activities on safety and reliability, such as use of patient simulation and CRM.
- Use the test of change work sheet to describe all learning activities to be tested in clinical settings or in the simulation lab, and clearly define the evaluation methods.

- Adapt and incorporate all educational activities adopted for the foundation level into the other levels of the nursing education program, with the goal of introducing the concepts early and reinforcing them throughout the student's education.
- Disseminate our findings to our TCAB collaborative study group (the 13 academic partners to the IHI's TCAB study group) and post educational activities on the QSEN Web site.

INCORPORATING CHANGE INTO THE CURRICULUM

We found two learning activities to be particularly effective for preparing nurses to provide safe and reliable care.

SBAR communication. The TCAB team provided an overview of SBAR communication techniques in presentations to faculty members who teach the introduction to nursing practice strategies course at UPMC Shadyside. SBAR communication cards were developed to help staff use the tool for assessing patients.

Sixty-Second Situation Assessment

A teaching tool to help students learn quick patient observation.

Purpose. This exercise is designed to assist nurses in developing situation awareness. In the patient care area, situation awareness focuses on the art of patient observation. This includes routine use of a general survey (observation) of the patient, family, and environment during every incidental encounter and periodically at planned intervals throughout the day. Situation awareness promotes a safer patient care environment and helps the nurse develop care priorities and attention to clinical detail.

Directions. Enter the patient's room. Observe the patient, family, and environment for up to 60 seconds, while reviewing the following questions in your mind.

ABC without touching the patient
- What data lead you to believe there is a problem with airway, breathing, or circulation?
- Is the problem urgent or nonurgent?
- What clinical data would indicate that the situation needs immediate action, and why?
- Who needs to be contacted, and do you have any suggestions or recommendations?

Tubes and lines
- Does the patient have any tubes or an IV?
- Is the IV solution the correct one at the correct rate?
- Does the patient need these tubes? If so, why?
- Do you note any complications?
- What further assessment needs to be done?

Respiratory equipment
- If the patient is using an oxygen delivery device, what do you need to continue to monitor to ensure safe and effective use of the system?

Patient safety survey
- What are your safety concerns with this patient?
- Do you need to report this problem, and to whom?

Environmental survey
- What in the environment could lead to a problem for the patient?
- How would you manage the problem?

Sensory
- What are your senses telling you?
- Do you hear, smell, see, or feel something that needs to be explored?
- Does the patient's situation seem "right"?

Additional assessment
- What additional information would be helpful for further clarification of the situation?
- What questions are unanswered? What answers are unquestioned?

After your assessment. Meet with your fellow students and faculty. Review each student's patient. Decide which patient you would focus on first, and why.

To illustrate the effectiveness of SBAR communication for the faculty, the team videotaped an exercise in which a senior-level student gave a report on a diabetic patient to a "physician" in the simulation lab. The faculty and the student watched the videotape. The student was then given a description of the SBAR model and an SBAR card, and had five minutes to reframe his patient report in the SBAR format before giving the report again. This encounter also was recorded and played back.

The difference in the two reports was astonishing, even to the TCAB team, which had anticipated improvement. The student recognized that he had been "babbling" in the first report and never clearly articulated his concern that the patient was hypoglycemic. In contrast, the SBAR encounter clearly communicated the patient's situation and the nurse's recommendation for care.

As a result, the observing faculty immediately decided to incorporate SBAR into the introductory course. All information about patients is now delivered in the SBAR format to faculty teaching this course. In fact, SBAR communication has been adopted as a clinical performance expectation throughout the entire nursing education program.

Situation assessment. One TCAB faculty member related the following story. The students on a medical–surgical rotation had completed their morning assessments when it was discovered that one student was missing. None of the other students thought to look for their missing peer to offer assistance. When questioned by the instructor, the students were oblivious to the concepts of monitoring the activities of other team members and providing task assistance. When the missing student was located, she was completing a thorough, head-to-toe assessment of a geriatric patient with repair of a traumatic fracture and delirium. When questioned about the status of her other patient, the student nurse admitted that she hadn't seen her yet—three hours into the shift.

This anecdote illustrates a lack of situation awareness. Because the CRM literature identifies situation monitoring and situation awareness as crucial elements in highly reliable teamwork in patient care,[5] we developed an exercise to teach situation awareness (see *Sixty-Second Situation Assessment*). In this exercise, students assess each of their patients in a 60-second visit before the morning report. When they meet as a team with their clinical instructor, they present their findings in SBAR format. As a team, the students decide which patients have the highest care priorities and which students will work

together to meet those needs. Then the instructor presents her or his own 60-second assessment of each patient and helps the students understand what they might have missed.

By the end of the term, after 14 weeks of practice, students at the foundation level were able to complete the situation assessment in an average of 15 seconds. On many occasions, students even demonstrated greater precision and attention to detail than the instructors. When these foundation-level students participated in problem-based scenarios in the simulation lab, they were able to identify key issues and make appropriate assessments or interventions in half the time it took upper-level students who hadn't learned this technique.

In the TCAB tradition of spreading successful tests of change, this learning activity was adopted for upper-level medical–surgical nursing courses and adapted for use in the maternal–child and mental health nursing courses. One of the medical–surgical nursing units at a UPMC hospital adapted this approach for its hourly rounds program. We shared the technique with our TCAB academic partners, and it was adapted into the curricula at two other schools.

EMPLOYER FEEDBACK

In addition to seeing improvements in the performance of nursing students in the simulation lab and in
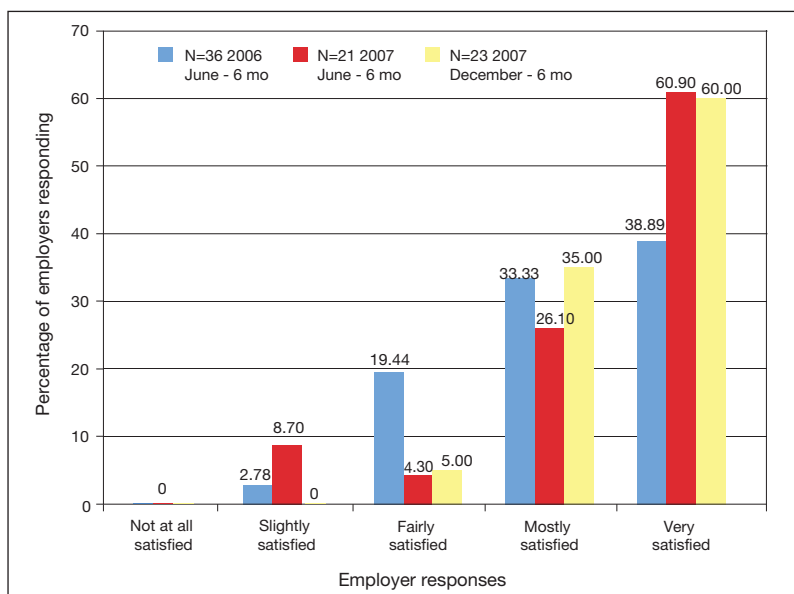
Figure 1. Employers' response to the survey question: "The graduate is able to collaborate with peers and professional colleagues to achieve desired outcomes when managing groups of patients." Employers were surveyed six months after graduation of the June 2006 class (N = 36), the June 2007 class (N = 21), and the December 2007 class (N = 23).
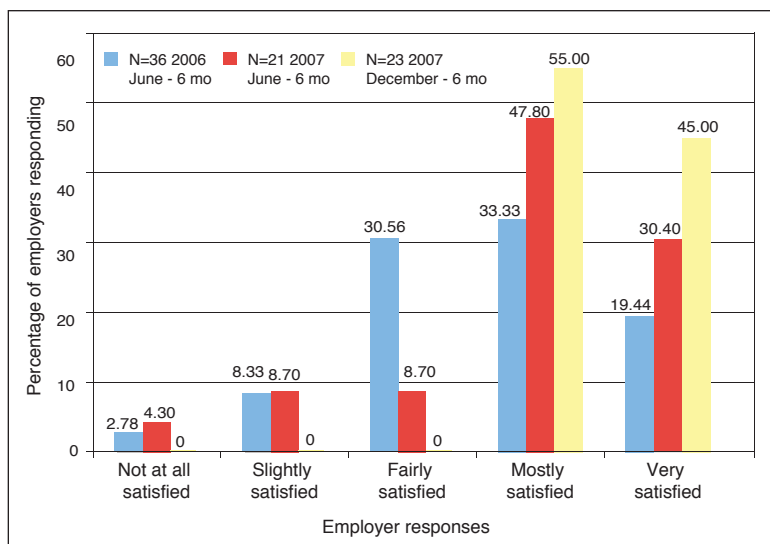
Figure 2. Employers' response to the survey question: "The graduate is able to create leadership strategies to solve problems in the delivery of nursing care to multiple patients." Employers were surveyed six months after graduation of the June 2006 class (N = 36), the June 2007 class (N = 21), and the December 2007 class (N = 23).

clinical training, the TCAB team sought employer feedback to verify that these learning exercises were improving the professional practice of new nurses. We surveyed the managers of our graduates working at UPMC hospitals after six months and again after one year of employment.

Seventy percent of unit directors reported being mostly or very satisfied with the ability of nurses who graduated in June 2006—before SBAR communication was incorporated into our education program—to collaborate with peers and professional colleagues. For June 2007 and December 2007 graduates, 96% of unit directors reported being mostly or very satisfied with their collaborative ability (see Figure 1).

Before we devised and implemented the Sixty-Second Situation Assessment tool, only 51% of unit directors had been mostly or very satisfied with the graduates' ability to create leadership strategies to solve problems in the delivery of nursing care to multiple patients. But 100% of the unit directors reported being mostly or very satisfied with this ability in graduates of the class of December 2007 (see Figure 2).

Six months after graduation, nurses were asked the same questions about their ability to collaborate and create problem-solving strategies when providing care to multiple patients. Compared with nurses who graduated before the introduction of TCAB, the new nurses reported having enhanced abilities in both areas. But their assessment of the improvement wasn't as dramatic as the employers' was.

LESSONS LEARNED

Even with these positive findings, the most significant insight we gained involved the faculty, not the curriculum. Successfully integrating learning activities that support the TCAB framework required first transforming the faculty. TCAB champions needed to be identified, and those innovators and early adopters helped the nursing school's leadership create a transformative environment. The key to success was that in order to teach TCAB principles, the faculty first had to adopt the processes into our operations.

Berwick identified necessary factors for successfully disseminating innovations in health care.[6] An innovation must be perceived as beneficial and compatible with users' values, beliefs, history, and current needs. Also necessary are being able to conduct trials and observe the results. The TCAB process enabled the faculty to do both, and our innovators then were able to demonstrate the benefits for later adopters.

The TCAB team also learned the importance of deliberate planning and execution in making small but significant changes. Not all faculty members needed to be TCAB experts, but all had to use the same standard on the clinical unit all of the time (to conform with reliability in teaching methods). The TCAB faculty set clear expectations, measured performance against expectations, and gave much feedback and encouragement.

In the past, quality improvement wasn't taught until the end of leadership courses. We realized that students need to learn about quality and safety from Day 1. Unless tools that promote patient safety and effective teamwork are constantly used, they may be forgotten once students transition to the cultures of the organizations in which they work. ▼

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