INNOVATIONS IN EDUCATION

A Multidisciplinary Teamwork Training Program: The Triad for Optimal Patient Safety (TOPS) Experience

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INTRODUCTION: Communication and teamwork failures are a common cause of adverse events. Residency programs, with a mandate to teach systems-based practice, are particularly challenged to address these important skills.

AIM: To develop a multidisciplinary teamwork training program focused on teaching teamwork behaviors and communication skills.

SETTING: Internal medicine residents, hospitalists, nurses, pharmacists, and all other staff on a designated inpatient medical unit at an academic medical center.

PROGRAM DESCRIPTION: We developed a 4-h teamwork training program as part of the Triad for Optimal Patient Safety (TOPS) project. Teaching strategies combined didactic presentation, facilitated discussion using a safety trigger video, and small-group scenario-based exercises to practice effective communication skills and team behaviors. Development, planning, implementation, delivery, and evaluation of TOPS Training was conducted by a multidisciplinary team.

PROGRAM EVALUATION: We received 203 evaluations with a mean overall rating for the training of 4.49 ± 0.79 on a 1–5 scale. Participants rated the multidisciplinary educational setting highly at 4.59 ± 0.68 .

DISCUSSION: We developed a multidisciplinary teamwork training program that was highly rated by all participating disciplines. The key was creating a shared forum to learn about and discuss interdisciplinary communication and teamwork.

KEY WORDS: teamwork; communication; patient safety; multidisciplinary; hospital.

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INTRODUCTION

Communication and teamwork failures are often cited as the most common cause of adverse events^{1–5}. The Joint Commission identified communication as a critical factor in more than 65% of reported sentinel events⁶. Teamwork training, which teaches important communication skills and team behaviors, has been proposed as a method to improve the quality and safety of care.

Current literature discussing health-care team training has largely focused on closed environments such as emergency departments, intensive care units, labor and delivery suites, or operating rooms^{7–13}. In these settings, all providers identify with a “unit-based” environment. Most medical units, on the other hand, have nurses who are unit-based and physicians (and others) who are “service-based,” with patients often housed on several geographic units.

Graduate medical education poses unique challenges to patient safety^{14,15}, some of which are due to poor teamwork¹⁶. Furthermore, accreditors and educators have emphasized teaching new core competencies (e.g., system-based practice) to promote quality and safety, but have given little guidance on the best educational strategies to employ^{17,18}. Multidisciplinary teamwork training has the potential to improve patient safety and can help break down the traditional discipline-based silos that contribute to communication and teamwork failures^{19–22}.

We developed an innovative 4-h teamwork training program targeting all providers and staff on an inpatient medical unit. The training was part of a project called the Triad for Optimal Patient Safety (TOPS)—a multidisciplinary and multicenter project aiming to improve unit-based safety culture through communication and teamwork initiatives. In this article, we discuss the TOPS Training program, its implementation, and lessons learned.

PROGRAM DEVELOPMENT AND DESCRIPTION

Curriculum Working Group

We began by assembling a multidisciplinary planning team (e.g., physicians, nurses, pharmacists) that included an aviation expert who added insights from that industry’s experiences with crew resource management^{23–28}. We also included experts in curricular development and individuals familiar with teaching key principles of teamwork and communication. Ultimately, we wanted a planning group that was

committed to multidisciplinary education and had strong interest, knowledge, or experience in the content matter. After reviewing available literature on existing programs and curricula, the planning team developed several overarching goals^{9,29-31}.

First, we wanted to create a program that actively engaged every patient care discipline. To achieve this goal, we targeted all disciplines, including nurses and pharmacists; physical, occupational, speech, and respiratory therapists; case managers and social workers; patient care assistants, unit clerks, and custodial staff. By being inclusive, we hoped to strengthen our overall teamwork message. On the other hand, casting the net so broadly challenged us to design content that would engage a diverse group of participants, particularly since most were sharing a classroom for the first time.

Our second goal was to recognize differences among participants in preferred learning styles. To address this, we used diverse teaching methods, including didactic presentations, interactive videos with facilitated discussion, and scenario-based small-group exercises for skill practice.

Our third goal was to force our multidisciplinary audiences to engage each other. Logistically, this required us to assemble a cross section of disciplines for each training session. Finally, we wanted participants to walk away with specific skills they could incorporate into daily practice, as well as a shared “mental model” for improving teamwork and communication.

TOPS Training Program Description

Table 1 highlights the features of our 4-h teamwork training program and the associated learning objectives. We also developed a TOPS Training Facilitator’s Guide (See Appendix 3 available online) to disseminate the program to other units and hospital sites. The basic framework (in order of presentation) involved:

1. A recognized leader – such as chief of medicine or institutional patient safety officer – introduces the session and shares a story about a local error, both to emphasize the importance of the training and institutional support.
2. “Laying the Foundation”: a prominent unit-based clinician presents a brief overview of safety culture, the importance of teamwork and communication, a few local anecdotes (e.g., unit-specific adverse events), and then sets the stage for the rest of the program.

3. Participants then watch the compelling safety video “*First, Do No Harm*”³² and participate in a facilitated discussion about how individuals and systems contribute to medical errors, and the role of communication and teamwork in those errors.
4. “Health-care Team Training” is the primary didactic lecture, which builds on learnings from safety training in aviation (Table 2 lists the skills introduced). Many of these lectures were given by our aviation consultant (a commercial pilot and psychologist), a lecture that became affectionately described as the “pilot talk,” though it was sometimes delivered by a physician or nurse.
5. Participants are then divided into small representative groups from all disciplines. Facilitators guide learners through two 45-min scenarios that apply the content to realistic patient care situations. At pre-defined points, facilitators prompt discussion about participants’ impressions from their own perspectives. The ensuing dialog allows groups to practice skills introduced during the didactic lecture. By providing opportunities to practice communication skills with members of other disciplines, traditional differences in provider-specific communication styles are revealed, and techniques to bridge these differences can be practiced. For example, the facilitator may ask participants to practice the use of a structured communication tool called SBAR (Situation, Background, Assessment, and Recommendation)³³. We provide an actual facilitator’s script for one of our scenarios in Appendix 2 (available online).
6. The program ends with the entire group reconvening. A few minutes are spent summarizing the session’s highlights and probing participants for reaction. These specific, concrete responses help solidify the day’s lessons. Course evaluations are completed.

PROGRAM IMPLEMENTATION AND ASSESSMENT

We organized six 4-h sessions, initially focused on securing blocks of time from the Internal Medicine Residency Program, and then assuring representation from each of the other disciplines. Overall, we trained 225 voluntary participants,

Table 1. TOPS Training Curriculum Agenda and Objectives

Laying the foundation 20 min	<ul style="list-style-type: none"> □ Define patient safety culture □ Recognize members of the health-care team □ Understand the role teamwork and communication play in patient safety
“First, Do No Harm” video 18-min video 15-min facilitated discussion	<ul style="list-style-type: none"> □ Assess the role “systems” and individuals in contributing to medical errors □ Describe how effective communication and teamwork can mitigate patient harm
Health-care team training lecture 60 min	<ul style="list-style-type: none"> □ Define error chains □ Identify specific communication skills and team behaviors (see Table 2) □ Illustrate ways to translate above skills into daily practice
Small-group scenarios Two 45-min exercises	<ul style="list-style-type: none"> □ Practice constructing an SBAR □ Integrate other communication skills into clinical case scenarios □ Demonstrate how ineffective or differing communication styles impact patient care
Closing 20 min	<ul style="list-style-type: none"> □ Restate how to incorporate newly taught skills into daily practice □ Discuss specific methods to improve teamwork and communication on the medical unit □ Introduce upcoming initiatives to foster greater multidisciplinary education

Table 2. Examples of TOPS Training Skills

Teamwork behaviors	
Leadership	Is there a clear leader? Is the leadership effective? Each team member can be a leader and must accept the responsibility to ensure a safe patient outcome
Situational awareness	Are the providers anticipating events? Does the team have a complete and updated picture of what is happening with the patient—in the past, present, future?
Workload management	Is the workload distributed appropriately and do individuals have the requisite skills? Are providers asking for and receiving help when needed?
Resource management	Is the workload distributed appropriately and are individuals being recognized for their skills? Resources include supplies, equipment, training, and individual and group expertise
Briefings	Is the plan of care clear to all team members and does everyone understand their role?
Debriefings	What did we do well? What could we have done better (e.g., following a code or a night on call)?
Communication skills	
SBAR	Structured communication tool for conveying critical information between providers: S ituation, B ackground, A ssessment, and R ecommendation
CUS words	Common language understood by all to mean, “Stop and listen to me”: I’m C oncerned, I’m U ncomfortable, and this is a S afety issue
Inquiry	A non-confrontational method to actively seek information or clarification from another team member
Advocacy	Using assertion to get a person’s attention, express concern, state a problem, propose an action, and reach a shared decision
Active listening	Was there eye contact? Were questions asked to confirm understanding? Was there multi-tasking while listening?
Critical conversations	Times when direct communication is required: at admission, during a change in clinical condition, at discharge, or at time of handoff

including 75% of the Internal Medicine housestaff, 90% of hospitalist attendings, 95% of nurses on our medical unit, 100% of pharmacists, 100% of case managers and social workers, and nearly all therapists, patient care assistants, and unit clerks. A total of 203 course evaluations were collected at the end of the sessions (90% response rate). The UCSF Committee on Human Research reviewed and approved the TOPS project.

The TOPS training course evaluations (see Appendix 3 available online) were designed to capture both participants’ experiences of the training and the logistics of the training itself. Questions assessed (1) each individual session for quality of instruction, content, and organization; (2) the location, format, and organization of the training sessions, including the use of a multidisciplinary group for training; (3) whether participation would change the way “I communicate with others” or the way “I practice”; and (4) the overall training experience. Questions were rated on a 5-point Likert scale (1 = lowest to 5=highest). Additional open-ended questions asked about the most common obstacles to effective teamwork, the most, and least, useful parts of the training, how long one had been working on our medical unit, and whether they would recommend the training to colleagues.

Participants rated the overall training highly, with a mean of 4.49 ± 0.79 , and 99% recommended TOPS training to their peers. Participants rated the multidisciplinary setting highly, with a mean of 4.59 ± 0.68 . By discipline, mean nurses’, pharmacists’, and physicians’ ratings for overall training were 4.71 ± 0.52 , 4.64 ± 0.49 , and 4.31 ± 0.61 , respectively. The differences for the overall rating and all other aspects of the evaluation were not statistically significant across disciplines. Participants also reported that the training was likely to change the way they communicate (4.37 ± 0.71) and practice (4.31 ± 0.56).

The most common reported obstacles to effective teamwork reported were time, culture, and workload. These also did not vary significantly among the disciplines. Participants’ comments indicated a desire for more small-group scenarios to foster the spontaneous cross-disciplinary discussions, highlighted the utility of specific communication skills (e.g., SBAR), and expressed appreciation for how each discipline’s training

shapes their communication style. Participants also hoped for further educational opportunities to build upon the multidisciplinary TOPS Training. Several participants pointed out the challenges of translating the learnings into practice when “not everyone speaks the same language yet.”

DISCUSSION

We developed a 4-h multidisciplinary teamwork training program to teach communication skills and team behaviors, begin breaking down professional silos, and raise awareness about the role these issues play in patient safety. The TOPS Training was rated highly, and feedback from participants supported our notion that teaching teamwork requires putting everyone—from the doctors, nurses, and pharmacists to the social workers and unit clerks—into the same learning environment.

We learned several lessons from our experience. First, the “logistics” of the program often drive key aspects of the training. Logically, our planning initially focused on creating content and engaging our diverse audience. In the end, simply

- 1) Clear indication of who you are paging
- 2) Clear indication of the patient and brief description of the issue

- 3) Your name, title, location, and callback #
- 4) If you need a callback or not

Figure 1. Guideline for a structured text page communication.

finding the appropriate space and time, while balancing the clinical and administrative schedules of people in disciplines that work different shifts, days, or rotations, was critical, requiring careful planning and coordination. We also found that non-clinical participants (e.g., unit clerks and custodial staff), whose engagement we worried about the most (particularly for clinical scenarios), were in fact among the most engaged, largely due to feeling acknowledged and *included* as part of the “health-care team.” Though we made training voluntary, we believe that leadership within all disciplines must *mandate* the training and help create time for it in people’s schedules. The perfect training program will fail if the participants lack “protected time” to fully engage, free of responsibilities such as answering pages. It will also fail if the audience does not include diverse disciplines, since the curriculum and training depend on spontaneous, cross-disciplinary dialogues and the entire thrust of the training is to break down professional silos.

Second, a multidisciplinary planning and teaching team is critical, both to help shape content and deliver it. Each discipline carries its own educational traditions, and the cross-disciplinary discussions can deteriorate into tense exchanges if the sessions are not skillfully facilitated. Furthermore, the role modeling—of having a physician and nurse, for example, co-lead or jointly facilitate a small-group discussion—addresses the very hierarchy we aimed to flatten. In addition, it was striking, and frankly unanticipated, that many participants shared how the challenges in communication and teamwork between disciplines mirror those that exist *within* their own discipline. For example, the case managers stated that the training changed the way they communicate with each other as much as they did with the other disciplines. This important learning came from the training experience itself.

Finally, an educational program focused on communication and teamwork skills must be coupled with operational activities (“putting the skills into practice”) to foster use of new skills and change behavior. Such activities might be the concept of “Critical Conversations” highlighted in Table 2 or creating structured mechanisms to send text paging communications (Fig. 1). Regardless of the method, a similar effort to hardwire or integrate new communication skills into existing processes, such as handoffs^{34–35}, provides an important opportunity for reinforcement.

CONCLUSIONS

Teamwork is essential to delivering high quality and safe care. Our program was motivated by a belief that improving teamwork required bringing the different disciplines together for a shared educational experience. It would be a mistake to expect that a single training session (a “one and done”) could change behavior. In our judgment, it would also be an error to rely solely on outside consultants to deliver a teamwork and communication curriculum. A multidisciplinary teamwork training program must be viewed as a tool (rather than a solution) and a start (rather than the end) of a locally owned program.

In summary, we created a novel multidisciplinary teamwork training program, the success of which depended on multidisciplinary planning, implementation, and participation. The program was highly rated by participants, and the multidisciplinary setting was particularly valued. The next steps moving

forward would be a more robust evaluation of the effectiveness of multidisciplinary educational programs in changing behaviors and clinical practice at the bedside³⁶. We hope our curriculum and materials will stimulate continued interest in shifting education away from existing silos and towards shared understanding of the communication and teamwork that patients deserve.

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Conflict of Interest: Jack Barker was employed as a consultant from Mach One Leadership, Inc., to contribute experience and expertise in developing and teaching teamwork training. There are no other conflicts of interest to report for the remaining authors.

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