An Interprofessional Standardized Patient Case for Improving Collaboration, Shared Accountability, and Respect in Team-Based Family Discussions

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Abstract

Introduction: The science of patient safety demonstrates that good communication is essential for effective interprofessional collaboration. Methods: We created a low-stakes, formative assessment with which medical students, pharmacy students, and nursing students could practice several of the Interprofessional Education Collaborative competencies. We aimed to enable students to practice collaborative care, respect for other disciplines, and shared accountability. Senior students from medicine, nursing, and pharmacy worked in teams to disclose a medical error to a standardized patient. The activity began with an icebreaker exercise wherein students learned about each other. Next, each team planned a strategy for error disclosure and collaboratively disclosed the error. Standardized patients evaluated the team’s performance. Subsequently, students regrouped for a debriefing. The participating institutions administered a survey to their students. Results: In total, 1,151 students participated: 464 fourth-year students from the University of Houston College of Pharmacy, 450 third- and fourth-year students from Baylor College of Medicine, and 237 fourth-year students from Texas Woman’s University Nelda C. Stark College of Nursing, all in Houston, Texas. Postsession survey data showed that students thought they achieved the relevant competencies. Students’ understanding of the perspectives of the other two disciplines improved. Students found the simulation encounter and debriefing effective in helping them consider the contributions of other disciplines to patient care. Discussion: This interprofessional standardized patient activity enabled collaborative problem solving. The debriefing discussion broadened students’ understanding of the expertise of the other disciplines and promoted shared accountability. Students found this activity engaging and effective.

Keywords
Interprofessional Education, Error Disclosure

Educational Objectives
By the end of this activity, learners will be able to:
1. Collaborate with members of other disciplines to identify lapses that led to a medical error.
2. Verbalize shared responsibility and accountability for a medical error.
3. Demonstrate respect for the expertise of the other two disciplines.

Introduction
Interprofessional collaboration and communication are essential to patient safety and quality care. The Interprofessional Education Collaborative defines interprofessional education as occurring “when students from two or more professions learn about, from and with each other to enable effective collaboration and improve health outcomes.” Effective interpersonal communication is a cornerstone of interprofessional collaboration, but the complexity of interactions involved in interprofessional communication make simple.
streamlined solutions to flawed communication elusive. Though health care delivery occurs through a network of teams, health education has traditionally been offered in silos. The Core Competencies for Interprofessional Collaborative Practice were developed to promote interprofessional learning and teamwork, with the eventual goal of improved patient safety. In 2016, the core competencies were updated into a single domain of interprofessional collaborative practice with four subcompetencies: values/ethics for interprofessional practice, roles/responsibilities, interprofessional communication, and teams and teamwork.

After identifying a local curricular gap in interprofessional education, our institution leveraged resources from a National Institutes of Health grant for increasing the behavioral and social sciences in medical education to develop and implement a standardized patient (SP) exercise in interprofessional collaborative practice. We created a low-stakes, formative assessment for medical students, pharmacy students, and nursing students that would allow them to learn and practice several of the interprofessional collaborative practice subcompetencies.

Our aim with this exercise was to enable students to practice collaborative care and develop their communication and teamwork skills. We intentionally kept this SP case as simple as possible, allowing students to focus on the interprofessional collaborative practice competencies. Disclosure of a medication error provided the ideal vehicle to practice and reflect upon these skills instead of the clinical performance of the learners in a crisis situation.

Since our case was developed in 2013, others have published interprofessional SP cases involving error disclosure, a patient safety theme that involves all disciplines in health care. SPs and observed structured clinical encounters are the most commonly published methods for teaching error disclosure; they have been used with both undergraduate health professions students and graduate trainees. Other interprofessional education sessions involving error disclosure use methods such as case-based discussions. Many workshops include a didactic component, teaching students some basics about error disclosure. Several include debriefing sessions with varying facilitation styles and varying lengths.

Here, we describe a unique interprofessional education activity for senior medical, nursing, and pharmacy students involving communication of a medical error to an SP. The goal is for the students to work collaboratively to disclose the error to the SP. Since all disciplines have had prior training in error disclosure, our session does not begin with didactic teaching. Instead, it starts with an icebreaker exercise that allows students to learn more about each other, develop a relationship, and gain a clearer understanding of each other's roles. Following the icebreaker, the students break the news about the medication error to the SP. Lastly, all students regroup for a debriefing session. Through this exercise, students are able to apply their knowledge and develop skills that are essential for collaborative practice.

Methods

Senior students from medicine, nursing, and pharmacy gathered on a monthly basis to participate in these mandatory sessions, which were sponsored by Baylor College of Medicine. Medical students participated as part of their subinternship, which students typically take late in the third year or in the fourth year. Most participating pharmacy students were in the last year of a 4-year program. These students could be on any clinical rotation at the time of the simulation. Some pharmacy students who would not be in Houston, Texas, for their fourth year participated late in their third year. Nursing students participated during the first semester of their fourth year. Nursing and pharmacy students were identified by their respective roles/ethics for interprofessional practice, roles/responsibilities, interprofessional communication, and teams and teamwork.
faculty and assigned to this interprofessional education activity as one of their graduation curricular requirements. These students all had prior experience in an inpatient clinical setting and basic knowledge of both the management of patients with chest pain and the pharmacology of heparin. The students had also previously received training on disclosure of medical errors and communication with distraught patients. All students had previously completed a prior interprofessional education activity\(^1\) and the Institute for Healthcare Improvement’s Open School module Responding to Adverse Events.\(^2\) The medical students had also completed a course on patient safety.

Students from the three disciplines had varying prior education on communicating with patients in emotional contexts. The medical students had received prior training in giving bad news, where they had encountered strong emotions in response to bad news. Nursing students had received training on interacting with patients struggling with emotion in a communication skills course and during their mental health module. Pharmacy students had also had a communication skills course where they had been trained about death and dying and had participated in patient counseling simulations.

This interprofessional SP activity took place in a simulation center at Baylor College of Medicine, and the debriefing occurred in two nearby classrooms. The students worked in teams of three (one student from each discipline), and each team participated in one encounter with the SP. Each SP saw a total of two teams. Appendix A describes the activities and timing.

The SP portrayed the son or daughter (depending on the gender of the SP) of a patient, Mrs. Dunn, an 80-year-old who was erroneously given an overdose of heparin. Mrs. Dunn was hemodynamically stable without evidence of bleeding and had been transferred to the Coronary Care Unit for additional monitoring. She lived with her son/daughter, who was also her medical decision maker. Mrs. Dunn’s son/daughter returned to the hospital at the request of the team to discuss what had happened to her. The script (Appendices B-D) directed the SPs to respond to the news with either anger or sadness (Appendices E & F). The SPs were randomly assigned to portray either version of the case.

We trained a total of 12 SPs to portray both versions of this case. Two of the authors, a faculty physician from internal medicine (Nadia Ismail) and a psychometrician who was also a clinical psychologist (Cayla R. Teal), conducted a 3-hour training with the SPs to ensure consistent performance of the emotions. SPs were given the scripts to review in advance. Training involved working through the various potential approaches students could take and the corresponding response the SP should have according to the algorithm provided (Appendices E & F). Each month, we recruited seven SPs to participate. Five of them interacted with the students, and two served as backups. The only materials required were clipboards for the students.

**Learner Assessment**

The SPs filled out checklists (Appendix G) in a course management system to rate the team’s performance. The questions on the checklist were derived from the Interprofessional Collaborator Assessment Rubric.\(^3\) The checklist also included constructs from the McMaster-Ottawa Team Observed Structured Clinical Encounter.\(^4\)

Each 70-minute session accommodated a total of 15 students, and we had a series of two sessions each month. We divided students into groups of three, with a representative from each discipline. If one discipline was unable to attend, we performed the activity with dyads rather than triads. The students worked together on an icebreaker exercise (Appendix H), which prompted them to learn more about each
other. Following the icebreaker, each group of students went to an examination room in the simulation lab. Students received a discipline-specific handout detailing the perspectives of the physician, the nurse, and the pharmacist in the events surrounding the medication error (Appendix I). Students had 10 minutes to discuss their perspectives with each other and create a strategy for delivering the news about the medication error to the patient’s son or daughter. After the planning session, the patient’s son or daughter, portrayed by an SP, entered the exam room, and the students disclosed the medication error. The SP responded with either anger or sadness. Students had a total of 15 minutes to disclose the error and defuse the situation.

At the end of the SP encounter, students regrouped for a 30- to 45-minute debriefing. Three faculty members, representing the three disciplines, facilitated the debriefing (see Appendices J & K for the facilitator guides to debriefing). As the debriefing started, the SPs filled out an evaluation of each team’s performance (Appendix G). Proctors gathered these evaluations and gave them to one of the facilitators in the debriefing. At the end of the debriefing, one facilitator read all of the SP comments anonymously so that students could benefit from all of the feedback, including feedback directed at other groups.

Facilitators prepared by reading the facilitator guides and observing a debriefing prior to facilitating a debriefing session. The discussion points raised in the facilitator guide served to reinforce the learning objectives, focusing on strategies for collaboration and communication between disciplines and highlighting the uniqueness and importance of each discipline’s role in patient care. The facilitator guide also ensured that faculty from all disciplines had an equal contribution to the discussion. Each debriefing session lasted 30 minutes, so total faculty time required was about 90 minutes on each day.

For program evaluation, the three participating institutions administered a survey to their students from September 2014 to July 2016 (Appendix L). The survey was approved by the Institutional Review Board at all three institutions. The survey asked the students to evaluate their team’s performance on several of the interprofessional collaboration competencies. It also sought to determine whether the students’ perspectives about the other disciplines changed and whether the encounter with the SP and the debriefing discussion were effective in broadening their understanding of these perspectives.

**Results**

From April 2013 to December 2017, a total of 1,151 students participated (464 pharmacy students, 450 medical students, and 237 nursing students). Since the nursing students were on a different academic calendar, some of the sessions involved only medical students and pharmacy students. Response rates for the survey were 97% for medical students, 92% for pharmacy students, and 44% for nursing students.

Postsession survey data, in which students rated their team’s performance, showed that most students thought they were achieving several of the interprofessional collaboration competencies (Table 1). The majority of students found their counterparts respectful of each other’s expertise, capable of developing rapport with the patient and team, and ethical. Overall, 92% of students thought their team members adequately described their roles and responsibilities during the planning session. For the communication competencies, the students found each other uniformly respectful when dealing with conflict. In contrast, a smaller proportion of nursing students found their colleagues capable of providing information in an understandable manner. The subcompetency “Recognize how one’s uniqueness (experience level, expertise, culture, power, and hierarchy within the health team) contributes to effective communication, conflict resolution, and positive interprofessional working relationships” had the lowest level of agreement.
from the students. Only 74% of students agreed or strongly agreed that their team members established hierarchy within the health care team. The students rated themselves highly on the teamwork competencies, including utilizing a team structure that contributed to effective collaborative care, participating in collaborative problem solving, and accepting responsibility for the outcomes.

Table 1. Student Postsession Survey Results

| Interprofessional Collaboration Subcompetency | Survey Item                                                                 | Number (% Responding Agree or Strongly Agree) |
|-----------------------------------------------|-----------------------------------------------------------------------------|-----------------------------------------------|
| VE4. Respect the unique cultures, values, roles/responsibilities, and expertise of other health professions and the impact these factors can have on health outcomes. | All the members of my team respected the expertise of other health professionals. | Medical Students (N = 181) 180 (99%) Pharmacy Students (N = 162) 158 (98%) Nursing Students (N = 48) 43 (90%) |
| VE6. Develop a trusting relationship with patients, families, and other team members. | All members of my team established trust and rapport with patients, families and team members. |                                           |
| VE7. Demonstrate high standards of ethical conduct and quality of care in contributions to team-based care. | All members of my team acted ethically with honesty and integrity. |                                           |
| RR1. Communicate one’s roles and responsibilities clearly to patients, families, community members, and other professionals. | All members of my team described own roles and responsibilities to one another clearly during the planning step. |                                           |
| CC2. Communicate information with patients, families, community members, and health team members in a form that is understandable, avoiding discipline-specific terminology when possible. | All members of my team provided information in a form that is understandable to non-healthcare professionals. |                                           |
| CC6. Use respectful language appropriate for a given difficult situation, crucial conversation, or conflict. | All members of my team interacted in a respectful manner when dealing with conflict. |                                           |
| CC7. Recognize how one’s uniqueness (experience level, expertise, culture, power, and hierarchy within the health team) contributes to effective communication, conflict resolution, and positive interprofessional working relationships. | All members of my team established hierarchy within the healthcare team. |                                           |
| TT5. Apply leadership practices that support collaborative practice and team effectiveness. | All members of my team utilized a team structure that contributed to effective collaborative care. |                                           |
| TT6. Engage self and others to constructively manage disagreements about values, roles, goals, and actions that arise among health and other professionals and with patients, families, and community members. | All members of my team participated in collaborative problem solving. |                                           |
| TT7. Share accountability with other professions, patients, and communities for outcomes relevant to prevention and health care. | All members of my team accepted responsibility for outcomes. |                                           |

Abbreviations: CC, interprofessional communication; RR, roles/responsibilities; TT, teams and teamwork; VE, values/ethics.

Results of the survey also showed that the students gained an improved understanding of the perspectives of their own discipline and the other two disciplines (Table 2). The students found both the encounter with the SP and the debriefing to be effective in helping them consider how different disciplines contribute to patient care (Figure 1 and Figure 2).

Table 2. Student Agreement With the Statement "I Have an Improved Understanding of the Perspectives of the Other Disciplines"

| Student Discipline | Percent Responding Agree or Strongly Agree |
|--------------------|------------------------------------------|
|                    | Physicians | Pharmacists | Nurses |
| Medicine            | 97         | 94          | 93     |
| Pharmacy            | 98         | 100         | 98     |
| Nursing             | 96         | 98          | 100    |
Discussion

Our interprofessional SP activity gave students the opportunity to work collaboratively to analyze the sources of a medical error and to disclose the error to an emotionally distraught SP. Students rated the problem-solving skills of their team members highly. Students uniformly found each other respectful when discussing the error with each other and with the SP. Lastly, students reported an improved understanding of the perspectives of the other disciplines after participating in the simulation. Thus, the simulation allowed students to achieve the learning objectives as well as several of the interprofessional education competencies, representing all four subcompetencies.

As reflected in the survey results, the debriefing discussion was crucial to the simulation activity. During the discussion, faculty members reinforced the learning objectives. One theme that consistently arose during the discussion involved the assignment of blame for the error. Frequently, one or a few medical students stated that they blamed themselves entirely. These students argued that they started the chain reaction of errors by entering the order incorrectly, so they should take the blame. At this point, a pharmacy student or nursing student frequently disagreed, and discussion ensued, leading to the ultimate revelation that every student felt personally responsible for the error that reached the patient. Facilitators
reinforced that each participant had the power to stop a process in the hospital: amend or discontinue an order, refuse to release medication from the pharmacy, or refuse to administer medication to a patient. Facilitators outlined to students how they could escalate situations to those with more experience and authority, working within the hierarchical constructs of health care teams. Facilitators reminded the students that even groups with a leader must have a culture of psychological safety in which any team member can raise a concern. This discussion gave students further insights into the roles and responsibilities of each discipline and also emphasized that each discipline can use its unique expertise to cross-check the others.

A second conflict that commonly arose during the debriefing discussion involved the concept of shared accountability. Some students placed the entirety of the blame for the error on a poorly designed health care system and failed to accept personal responsibility for the error. When students failed to accept responsibility for their role in the error, due either to fear of litigation or to placing blame on the faceless system, their encounters with the SPs went poorly. SPs expected each student to admit his or her role in the series of errors that occurred and to apologize, just as actual patients expect apologies. Through the debriefing discussion, students came to realize that the discussion with the SP went best when each individual participant admitted and explained his or her role in the error.

The SPs’ comments frequently reinforced these lessons on collaboration and shared accountability. The students heard the comments from all SPs in an anonymous fashion, allowing them to learn from all the feedback provided. The SPs noted the students’ ability to work collaboratively and whether one student dominated the conversation. They commented on the assignment or acceptance of blame among the students. If one student was too quiet or not forthcoming, the SPs usually made note. The SPs also gave feedback on the students’ communication skills, sometimes citing a lack of empathy or facial expressions that were incongruent with the situation. Facilitators prompted the students to reflect on how they could use the SPs’ feedback to improve collaboration and communication skills when interacting with each other and with patients in clinical settings.

During and after the debriefing, students frequently offered informal feedback about the session. The students appreciated meeting their counterparts from the other two disciplines during the icebreaker exercise (a crucial component of team formation) and having time to plan their discussion with the patient. Many students noted that though they worked with the other two disciplines in the hospital setting, they did not form strong relationships with anyone from these disciplines and that they usually provided care within silos. When they spoke about teams in the hospital, it was frequently the physician team, the nursing team, or the pharmacy team, rather than an interdisciplinary team with the patient at the center. Some students noted that in cases when they did work on interdisciplinary teams, patients appreciated the approach.

Like others, we found error disclosure to be an effective scenario for an interprofessional education simulation. Each of the three disciplines played a critical role in the complex processes that occurred between the time the medication was ordered and the actual administration of that medication. Students from all disciplines had a clear understanding of their discipline’s role in medication ordering, delivery, and administration. The scenario gave students the opportunity to reflect on their discipline’s role in preventing medication errors. Our scenario also involved flawed communication between the three disciplines. The scenario prompted students to discuss how communication among the disciplines could be improved. It also reinforced important patient safety concepts, such as speaking up to identify and prevent errors and escalating issues up the chain of command within each discipline.

We chose to vary the emotions of the SP to add some variability to the students’ experiences and to mitigate against the inevitable case leakage. Often, details of simulation exercises are shared by
classmates with other students in advance of their participation. By varying the SP’s emotion, students were forced to work together to communicate with the SP and were not able to enter the simulation with a scripted response suggested by a classmate. We aimed to challenge the students to react as a team to the SP responses rather than revert to discipline-specific roles. However, we were mindful that students could lose sight of the collaborative goals of the simulation experience when patients were in danger or distress. Therefore, we monitored the SP responses and calibrated them so that they did not overwhelm the learners.

This activity presented several challenges for implementation. The first was that the three disciplines involved were from different institutions, so finding a common time for students on clinical rotations to meet for a simulation activity was difficult. We scheduled the session dates 6-12 months in advance. Due to differences in the school calendars, we occasionally had sessions with only two disciplines, thereby changing the nature of the encounter and the insights gained by the students. The facilitators provided the perspective of the absent discipline during the debriefing. Each session required a minimum of seven SPs, and we kept a pool of about 12 SPs who were trained on the case so that we had a sufficient number every month. We used the simulation lab because it had recording equipment and computers on which the SPs could complete the checklists. Initially, the activity was funded by a grant, but once the grant funding ended, the medical school provided funds for use of the simulation lab and the SPs. Lastly, we required sufficient trained faculty, at least two per discipline, so that one could participate in the debriefing each month.

Our study had several limitations. We had lower numbers of participants from nursing and a lower response rate on the survey from those nursing students due to differences in the academic calendar of the nursing school compared with the other two institutions. The wording of the survey item about establishing hierarchy within the health care team may have affected students’ responses to this item, as it did not emphasize how hierarchy within the health care team could influence communication. Additionally, the wording of the survey questions completed by students had a strong social acceptance bias, possibly producing a ceiling effect. A limitation in our evidence of efficacy is that the evaluation of the interprofessional education competencies relies on student self-evaluation, rather than external evaluation from the SP or faculty observer. Lastly, the evaluations completed by the SPs provided only team scores, not individual scores for each student.

In conclusion, students found this educational activity engaging and effective. We plan to continue it with senior medical, pharmacy, and nursing students. We are challenged to evaluate the team as well as the individuals who compose the team. In the future, we may substitute a reflective essay about both the simulation and the debriefing as a method of formative assessment.

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Ethical Approval
The Institutional Review Board for Baylor College of Medicine and Affiliated Hospitals and the University of Houston Division of Research Institutional Review Board approved this study.

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