A Cross-Specialty Examination of Resident Error Disclosure and Communication Skills Using Simulation

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ABSTRACT

Background Disclosure of medical errors is important to patients and physicians, but formal disclosure training during the graduate medical education curriculum is limited.

Objective We examined resident competence related to error disclosure, using standardized patient (SP) ratings of resident communication skills.

Methods All first-year residents from medicine, radiology, emergency medicine, orthopedic surgery, and neurological surgery completed a 20-minute simulated session in which they were provided background information on a medical error they had made and were asked to disclose the error to an SP acting as a family member. Residents were then debriefed and completed a postscenario questionnaire. The SPs completed an 11-item communication assessment and 3 milestone rating tools on professionalism (PROF-1, PROF-3) and interpersonal and communication skills (ICS-1).

Results Ninety-six residents from a single institution participated toward the end of the intern year. Communication assessment scores ranged from 23% to 100% (mean [SD], 80.6 [17.0]). Mean (SD) milestone ratings across specialties were 2.80 $\pm$ 0.92 for PROF-1, 2.48 $\pm$ 0.92 for PROF-3, and 2.45 $\pm$ 0.92 for ICS-1. One-way analysis of variance revealed no significant differences among specialties on milestone or communication ratings. Residents who accepted personal responsibility for the error (84.55 [14.06]) received significantly higher communication ratings from SPs compared with residents who did not (66.67 [19.52], $P < .001$).

Conclusions This SP assessment of error disclosure by first-year residents from multiple specialties was feasible and acceptable. It revealed areas of improvement as well as considerable variation in communication skills and professionalism among residents.

Introduction

Reporting and disclosing medical errors is important to ensuring safe medical practice and patient trust. Taking responsibility for medical errors and committing to correcting them and avoiding recurrence are elements of ethical practice at the core of resident education.

Research has shown that the majority of patients want full disclosure of errors when they occur.[1] However, research suggests physicians may not always follow this practice. One study showed that, while 93% to 97% of physicians and residents agreed that errors should be disclosed, only 41% disclosed minor errors and only 5% disclosed major errors.[2] Despite the importance of disclosure of medical errors, formal disclosure training for physicians is limited, with only a third of trainees receiving any training in error disclosure.[3] The same study found that the majority of trainees' first experiences with error disclosure occurred with real patients.[3] Accrediting bodies, including the Accreditation Council for Graduate Medical Education (ACGME) and The Joint Commission, have standards to ensure competency related to error disclosure.

The purpose of our study was to examine postgraduate year 1 (PGY-1) resident competence and milestone achievement related to error disclosure in multiple specialties using standardized patients (SPs).

Methods

Scenario

In May 2016, interns were invited to complete a 20-minute SP assessment regarding disclosure of a medical error. An overview of the scenario and instructions given to the residents and SP actors is provided as online supplemental material. Seven SPs were hired and trained to perform the case and evaluate the residents. The 90-minute group training included case review, role-play, and an exercise to

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standardize assessment (provided as online supplemental material). The SPs were instructed to respond with disbelief and fear upon hearing of the error and to exhibit increased frustration if the resident did not accept responsibility for the error.

Evaluations

After the event, SPs completed an 11-item communication scale (0, not done; 0.5, done incorrectly; 1, done), provided as online supplemental material. The SPs also completed 3 milestone assessments, including professionalism (PROF) 1 for demonstrating professional and respectful interactions, PROF-3 for responding to each patient's unique characteristics and needs, and interpersonal and communication skills 1 (ICS-1) for communicating effectively with patients and caregivers on a 1 to 4 scale (provided as online supplemental material).[4] Finally, the SP indicated to whom the resident assigned responsibility for the mistake, and how the resident indicated they would prevent the mistake from recurring in the future using an open text response.

After the encounter, residents were debriefed and asked to list the most important aspect of disclosing a medical error and the mechanism for reporting medical errors at their primary hospital.

This quality improvement project was deemed exempt by the Baylor College of Medicine Institutional Review Board.

Statistical Analysis

Basic descriptive analyses were used to provide information on frequencies and means, independent samples *t* tests and analysis of variance (ANOVA) were used to compare means across groups, and Pearson correlations were used to explore relationships among evaluation metrics using SPSS version 24.0 (IBM Corp, Chicago, IL). Open responses were reviewed for common themes.

Results

Participants

All 96 PGY-1 residents participated in the standardized patient assessment as part of curricular requirements, with 65 representing medicine (67%), 14 radiology (15%), 10 emergency medicine (EM; 10%), 5 orthopedic surgery (5%), and 3 neurological surgery (3%).

Communication Scores

Communication assessment scores ranged from 23% to 100%, with an average score of 81% (SD = 17%). Means per specialty were 84% (medicine), 79% (neurological surgery), 75% (EM and orthopedic surgery), and 73% (radiology), with ANOVA demonstrating that differences among specialties were not significant. Overall, the items that displayed the lowest means across all groups included, "Identifies process for continued updates and communication with family" (0.57 ± 0.41) and "Describes steps to prevent this problem in the future" (0.60 ± 0.37). Items with the largest means included, "Sits down or meets you at your level" (0.99 ± 0.07) and "Takes appropriate responsibility for the mistake" (0.89 ± 0.25).

What was known and gap
Residents may be involved in disclosing medical errors, yet lack a safe and effective way to practice and receive feedback on their communication skills.

What is new
Simulation of medical error disclosure for first-year residents using standardized patients (SPs) allowed residents to practice error disclosure in a safe, low-impact setting.

Limitations
Single institution study, and the accuracy of SP feedback was not assessed.

Bottom line
The SP assessment was feasible and acceptable and showed variability in communication skills and professionalism among trainees.

Milestone Ratings

Mean milestone ratings are provided in the TABLE. Mean ratings across specialties were 2.80 ± 0.92 for PROF-1, 2.48 ± 0.92 for PROF-3, and 2.45 ± 0.92 for ICS-1. The range of ratings spanned all levels for each milestone. One-way ANOVA revealed no significant differences among specialties.

Error Disclosure Trends

The SPs reported that residents took personal responsibility 71% of the time (68 of 96). In the remaining cases, residents assigned blame to the team using "we" phrases (10%, 10 of 96), accepted personal responsibility only after prompting from the SP (7%, 7 of 96), blamed the system (4%, 4 of 96), assigned no source (ie, "a mistake was made"; 4%, 4 of 96), or blamed other team members (3%, 3 of 96).

When residents were asked by the SPs to describe what actions they would take to ensure the mistake would not occur again, 37% (35 of 96) indicated they would reach out to their quality improvement teams to develop solutions. Almost a third (29%, 28 of 96) provided no personal action they would take, whereas the remaining participants indicated they would take personal action (ie, "I will be sure to double check the record next time"; 22%, 21 of 96) or would ensure

TABLE
Milestone and Communication Means by Specialty

Specialty	No.	Professionalism-1 (1–4), mean ± SD	Professionalism-3 (1–4), mean ± SD	Interpersonal and Communication Skills-1 (1–4), mean ± SD	Communication (1%–100%), mean ± SD
Medicine	65	2.95 ± 0.94	2.65 ± 0.98	2.55 ± 0.92	83.6 ± 15.5
Emergency medicine	10	2.20 ± 0.79	2.00 ± 0.82	2.00 ± 0.67	74.5 ± 25.0
Radiology	13	2.54 ± 0.88	2.23 ± 0.44	2.31 ± 0.85	73.1 ± 15.0
Neurological surgery	3	3.00 ± 1.00	2.67 ± 1.15	3.33 ± 1.15	78.8 ± 18.9
Orthopedic surgery	5	2.60 ± 0.55	1.80 ± 0.45	1.80 ± 0.84	74.5 ± 16.6
Total	97	2.80 ± 0.92	2.48 ± 0.92	2.45 ± 0.92	80.6 ± 17.0

the team would communicate appropriately (13%, 12 of 96).

When residents were debriefed and asked the most important aspect of disclosing a medical error, the majority (60%, 58 of 96) responded that honesty and truthfulness were critical. The remaining residents responded that accepting responsibility (20%, 19 of 96), providing specifics regarding details of the situation (15%, 14 of 96), apologizing (3%, 3 of 96), and other factors (2%, 2 of 96) were most important. Additionally, half of the residents indicated that the primary mechanism for reporting a medical error should be the anonymous error reporting system. The remaining residents responded that they would inform an attending/supervisor to manage the situation (25%, 12 of 48), inform the quality improvement team or administration (17%, 8 of 48) or directly inform the patient themselves (6%, 3 of 48). A small percentage (4%, 2 of 48) indicated that they were unsure how to report medical errors.

Communication Scores Based on Responsibility Acceptance

We compared overall communication ratings based on who was assigned responsibility by the resident. Residents who immediately accepted personal responsibility received the highest average communication score of 84.96 ± 13.90. Those who eventually accepted responsibility after prompting received the next highest score of 80.52 ± 16.12, followed by residents who provided no source (71.59 ± 24.72), blamed the system (70.46 ± 11.44), and assigned responsibility to the team (66.36 ± 18.95). Residents who blamed other team members received the lowest communication ratings of 56.06 ± 28.88. Overall, independent sample *t* tests indicated that residents who accepted personal responsibility for the error (84.55 ± 14.06) had significantly higher communication ratings by SPs compared with residents who did not accepted personal responsibility (66.67 ± 9.52, $P < .001$).

Feasibility

The implementation of this SP assessment took place over 2 days, taking only 1 hour of each resident's time for the assessment and group debriefing, 2 days of SP time (approximately $2,170), and 2 days of the simulation director and a simulation staff member's time. Facilities were provided by the institution at no cost.

Discussion

Our results show a wide range of ACGME milestone achievement and communication scores in late PGY-1 residents from several specialties, and that gaps remain in resident ability or willingness to accept responsibility after an error has occurred. In addition, residents did not agree on which communication has the greatest impact, and a majority did not commit to taking direct personal action to avoid recurrence of errors.

Prior work in this area has shown that physicians acknowledge the ethical imperative of full disclosure yet find it hard to disclose error in practice.[2] Our work aligns with these findings, as residents, who were specifically asked to disclose the error and accept personal responsibility, did so only 70% of the time. The remaining residents shifted blame to the team, system, or another health care professional. Other studies have used simulation to assess resident error disclosure skills and have found a similar frequency of shifting blame to others.[5] Gaps in residents' error disclosure and accepting responsibility emerged in a simulated setting, in which residents were aware of the goal of the training and evaluation being conducted, and in which there were not real consequences for the trainees or their career. This suggests that the frequency of accepting responsibility may be even lower in a real clinical context. Thus, it may be beneficial for future research to explore how simulation scores compare with clinical evaluations or other hospital metrics.

Other attempts to measure performance in this domain have included objective structured clinical

examination–like stations, but have carried out checklist-like assessments only after learners have completed a curriculum.[5,6] Our study used ACGME milestone evaluations to inform current competency across a multidisciplinary group of learners, allowing for direct assessment, opportunities for teaching through feedback, and identification of trends across specialties.

Our study has limitations. While participants included residents across multiple specialties, the study was conducted at a single institution. Future multiinstitutional work is needed to better understand resident competence in this area. The exercise used SP evaluators, rather than real patients. Although the SPs were trained specifically on the script and evaluation tool, we did not conduct constancy or accuracy checks of their ratings.

Future work should examine the effectiveness of combining this assessment platform with opportunities for formative feedback. Additionally, repeat testing, with a different scenario at a later point in time, could determine whether the SP simulation can function as an effective intervention as well as an assessment.

Conclusion

A highly feasible assessment of residents' error disclosure performance late in their first year of training obtained a snapshot of current error disclosure competence across medical specialties, and explored how communication behaviors were rated by SPs. The simulation experience allowed residents to practice, learn, and reflect on their ability to disclose errors, while simultaneously providing faculty with important information for curricular reform.

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