Coming Out of the Dark: A Curriculum for Teaching and Evaluating Radiology Residents' Communication Skills Through Simulation

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INTRODUCTION

The purpose of this pilot is to develop and implement a curriculum to teach radiology residents communication skills through simulation. Communication skills are a core competency for which radiology residents must be evaluated. As the practice of radiology evolves into a more patient-centered model, the importance of effective communication skills will continue to increase. There is evidence that effective communication skills can be acquired through appropriate training [1]. However, very few residency programs provide formal training and evaluation programs for teaching effective communication skills. The task of training radiology residents in effective communication skills is challenging, as this cannot be achieved by merely adding additional didactic lectures to our standard curriculum. Simulation has been shown to be an effective, and long-lasting, method for teaching physicians communication skills [1]. To our knowledge, there is no program that has been created to both teach and assess radiology residents' communication skills [2].

METHODS

Creating the Curriculum

The curriculum was developed and run in collaboration with our interprofessional Center for Experiential Learning and Simulation (iCELS) staff, who helped plan out the simulations, develop the teaching module, the individual scenarios, pre- and postsimulation evaluations, and resident evaluations. A teaching module was created based on the Gap-Kalamazoo Communication Skills Assessment Form (GKCSAF). It was designed as a self-teaching module using 19 PowerPoint slides (Microsoft, Redmond, Washington) that reviewed the essential elements of effective communication.

Two sets of six common radiology communication scenarios were created: (1) disclosing and apologizing for a medical error, (2) conveying bad news in breast imaging, (3) canceling an image-guided procedure, (4) radiation risk counseling, (5) communicating results in pediatric imaging, and (6) talking to an angry referring physician on the telephone. Two different versions of each scenario were needed for the pilot, as there would be a pretraining simulation (simulation 1) and a posttraining simulation (simulation 2). Each scenario included background information, enactment, and notes to the acting patient. A radiology faculty member trained in communication skills (faculty evaluator) and an acting coach coached each acting patient before the simulations about each scenario to make the simulation as realistic as possible.

A survey was administered postsimulation to assess how the residents felt about the training experience, as well as to assess any potential impact of the training on their comfort level with their communication skills (Appendix). An evaluation form, based on the GKCSAF, was also created to rate each resident on his or her competency on a 5-point Likert scale (1 = poor to 5 = excellent). The form included the ability to enter free text to allow comments on positive actions and areas to improve [3].

Implementing the Curriculum

The study population was composed of first-year (N = 5) and fourth-year (N = 3) radiology residents (postgraduate year 2 and postgraduate year 5). Residents each participated in two rounds of simulations as part of the pilot study (Fig. 1). The first simulation session was conducted before any communication skills training. Before participating in the second set of simulations, the residents participated in the debriefing sessions and underwent

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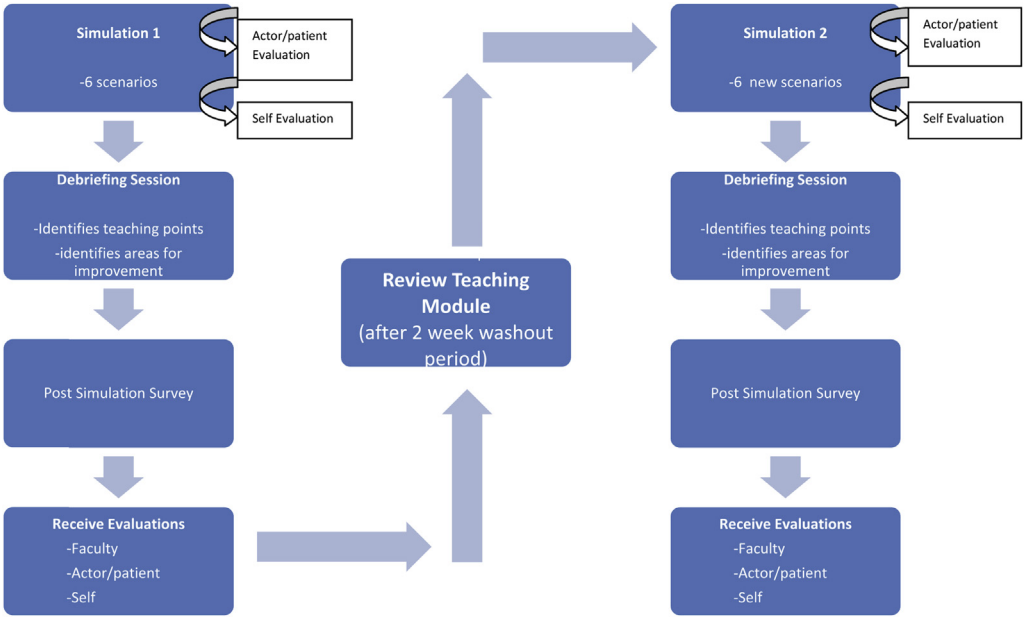

Fig 1. Flow chart describing the simulation-based communication skills curriculum.

our communication skills training module (Fig. 1).

The patient-actors prepared by reviewing a written script and attending a 4-hour training session. The training session was staffed by a professional acting coach, as well as one of the faculty raters, to allow for adequate preparation for the scenarios.

Before the first simulation, the residents completed an anonymous electronic survey about communication/simulation using Learning Space (CAE Healthcare, Quebec, Canada) software, which allows integration of the audiovisual component of simulation-based learning with performance assessment tools for health care education. The simulation took place as follows: (1) the resident is given 5 minutes to read the details of the scenario on a computer outside the simulation room before the simulated scenario, (2) the resident enters the simulation room and begins the simulation with the patient-actor, (3) simulation concludes and the resident leaves the simulation room, (4) the resident completes a self-evaluation and the patient-actor fills out an evaluation of the resident's performance (10 minutes). Twelve minutes were allocated for each scenario. The residents all participate in the simulation at the same time; however, each resident is doing a different scenario. Thus when resident 1 is doing scenario A, resident 2 is doing scenario B, etc. After completing each scenario, the resident advances to the next station, until all residents have participated in all six scenarios.

During the simulation, a single faculty evaluator watched one video for each scenario, involving different residents, and made written notes on the resident's performance. The video was then shown during the debriefing, in conjunction with the feedback from the faculty member. Immediately after completion of all six scenarios, the residents returned to the debriefing room to watch the six videos in which they participated. Teaching points from each debriefing were identified and recorded. Each resident participated in the six communication scenarios with trained professional actor/patients. Resident performance in each scenario was evaluated by the three faculty evaluators after the simulation concluded. The residents also performed self-evaluations after each scenario. The residents received their actor/patient and faculty evaluations for review before the next simulation.

After a 2-week washout period, the residents participated in a second simulation with six new scenarios. The second set of new scenarios covered similar topics to the first. The residents again performed a self-evaluation and were also evaluated by both the patient-actors and faculty. A second debriefing session ensued. Again, the residents received their patient-actor and faculty evaluations for review. After both parts of the simulation/training were completed, the residents again filled out the anonymous electronic survey.

OUTCOMES

The results of the postsimulation survey showed that all eight residents agreed that practicing their

communication skills boosted their ability to communicate and that the educational feedback from the training sessions was useful, which contradicts their self-evaluations (Appendix). Seven of the eight residents agreed that practicing their communication skills boosted their self-confidence and that practicing their communication skills with simulated patient encounters helped them become better doctors (Appendix). After training, resident scores improved for all individual scenarios, except breast imaging. The "cancel procedure" and "radiation risk discussion" scenarios saw the largest improvement in scores. The average GKCSAF score for all residents improved from 74% (range 65%-82%) to 79% (range 66%-86%) (Fig. 2). As part of the concept of a "360" evaluation, residents were evaluated by the faculty and the patient-actors, as well as by completing a self-evaluation. The average overall score provided by the faculty evaluator increased from 75% to 85%. The average overall score provided by the patent-actors increased from 80% to 83%. The average self-reported score did not change: average of 71% pretraining and 71% posttraining.

Increasingly, radiologists are being encouraged to communicate directly with patients and referring clinicians. The quality of these communications has the potential to improve patient satisfaction [4]. Traditionally, communications training has not been a routine component of radiology resident education. The ACGME now requires that communication and interpersonal skills training be incorporated into the resident curriculum and evaluated for each resident. In our experience, communications training is best accomplished through simulation. The effects of simulation-based communication skills training have been shown to be long lasting, with evidence of the training still seen in physicians' practice 12 months posttraining [1]. Additional communication skills training has been shown to change physicians' attitudes and beliefs about the importance of effective communication in patient care, thus increasing their use of effective communication skills in clinical practice [5]. Even with this evidence and the new emphasis to increase patient contact and communication, little communication skills training has been implemented in radiology at the residency level. Lown et al [6] demonstrated that an educational curriculum incorporating communication skills training for communicating mammography results to patient-teachers (also known as patient-actors) and evaluation of these skills can be implemented in a radiology residency program.

However, participating in an isolated simulation alone is not sufficient to truly improve resident communication skills, as a key aspect of simulation-based training is the postsimulation debriefing. During the postsimulation debriefing session, the resident's performance is reviewed and teaching points identified. Postsimulation debriefing sessions have been identified as a feature of simulation-based training that leads to effective learning [7]. The debriefing session allows the

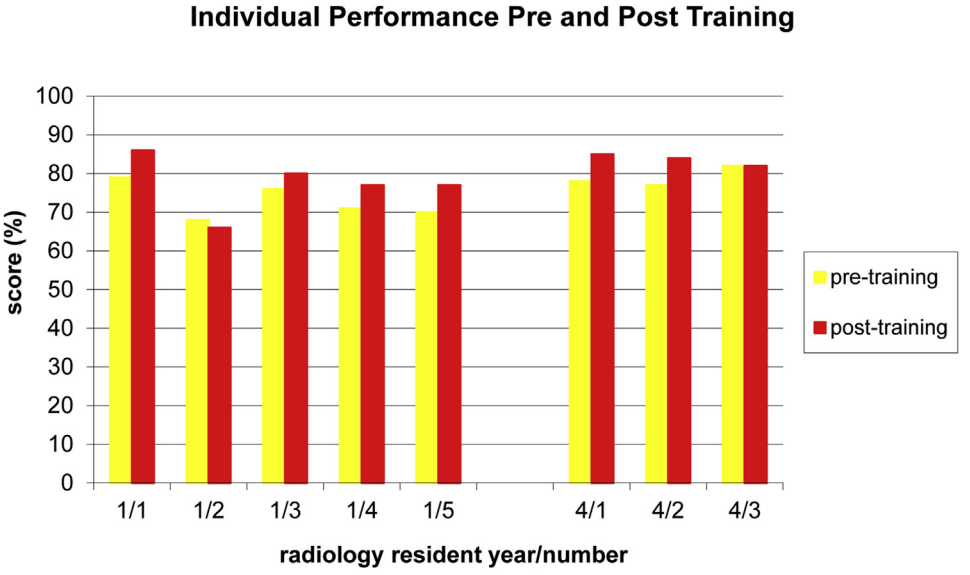

Fig 2. Individual resident overall pre- and posttraining performance scores (average of all evaluators).

residents to learn what they did well and what they can improve on.

Another important mode of feedback for the residents is a written evaluation. The residents in our workshop received written feedback from both the faculty evaluator and the acting patient for each simulated scenario. The written evaluation is in the form of the GKCSAF, by which residents are rated on how well they executed the nine essential elements of communication. Written feedback on the GKCSAF not only provides feedback in qualitative form, compared with simple verbal feedback, but also provides the residency program director a quantitative assessment of the resident's communication skills and facilitates compliance with the ACGME requirements for residency programs to both train and evaluate their residents' communication and interpersonal skills. Residents also perform a self-evaluation after each simulated scenario. Overall, the residents had higher scores posttraining than pretraining when the faculty, patient-actors, and self-evaluation scores were averaged together (Fig. 2). It has been shown that having individual faculty, patient-actor, and self- (360-degree) evaluations are valid and reliable ways to assess a resident's competency in communication/interpersonal skills [8].

Both faculty and patient-actors saw an improvement in the residents' communication skills after training. When analyzing resident scores based on each individual scenario, we found that the posttraining score improved compared with the pretraining score for all but the breast imaging scenario. Interestingly, the residents scored themselves lower on both pre- and post-simulation evaluations than the faculty or patient-actors. Despite their self-evaluation scores not reflecting an improvement after training, posttraining surveys showed that all eight residents agreed that practicing their communication skills boosted their ability to communicate and that the educational feedback from the training sessions was useful, which contradicts their self-evaluations. Seven of the eight residents agreed that practicing their communication skills boosted their self-confidence and that practicing their communication skills with simulated patient encounters helped them become better doctors. These results echo those found in the literature which states simulation helps improve communication skills and boosts self-confidence in physicians' ability to communicate [9].

In conclusion, simulation is a promising method for teaching and evaluating residents' communication skills.

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APPENDIX

Results of the Posttraining Survey

Survey Question	Strongly Agree	Agree	Disagree	Strongly Disagree	N/A
1. Practicing my communication skills boosts my ability to perform /communicate	3	5			
2. Educational sessions using medical simulation are enjoyable	2	5	1		
3. It is ok to make mistakes using simulated patient experiences	5	2		1	
4. I receive useful educational feed back from the training sessions	5	3			
5. The acting patients simulate situtations realistically	2	6			
6. Practicing my communication skills boosts my self-confidence	2	5	1		
7. Practice sessions in the iCELS are a good use of my time	2	5	1		
8. Practice sessions in communication skills should be a required component of clinical training	3	4	1		
9. Practicing my communication skills with simulated patient encounters helps me become a better doctor	3	4	1		
10. The controlled environment in the iCELS helps me focus on challenging patient interactions	3	5			
11. Difficult patient encounters presented in the iCELS are engaging	2	6			