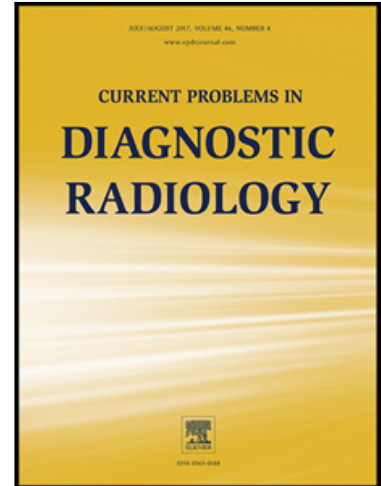


Accepted Manuscript

Teaching Radiologists Who Perform Image Guided Interventions
Effective Communication Skills Through Simulation

Carolynn M. DeBenedectis MD , Max P. Rosen MD MPH

PII: S0363-0188(18)30082-3
DOI: [10.1067/j.cpradiol.2018.05.013](https://doi.org/10.1067/j.cpradiol.2018.05.013)
Reference: YMDR 641



To appear in: *IIMB Management Review* *Journal of Cardiac Failure* *Journal of Exotic Pet Medicine* *Biology of Blood and Marrow Transplantation* *Seminars in Spine Surgery* *Seminars in Arthritis & Rheumatism* *Current Problems in Pediatric and Adolescent Helath Care* *Solid State Electronics Letters*

Received date: 3 April 2018
Revised date: 29 May 2018
Accepted date: 30 May 2018

Please cite this article as: Carolynn M. DeBenedectis MD , Max P. Rosen MD MPH , Teaching Radiologists Who Perform Image Guided Interventions Effective Communication Skills Through Simulation, *The End-to-end Journal* (2018), doi: [10.1067/j.cpradiol.2018.05.013](https://doi.org/10.1067/j.cpradiol.2018.05.013)

This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting proof before it is published in its final form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.

**Teaching Radiologists Who Perform Image Guided Interventions Effective Communication Skills
Through Simulation**

**Teaching Radiologists Who Perform Image Guided Interventions
Effective Communication Skills Through Simulation**

Carolynn M. DeBenedectis, MD and Max P. Rosen, MD MPH

Department of Radiology, UMass Memorial Medical Center, Worcester, MA 01605

Address correspondence to:

Carolynn M. DeBenedectis, MD

Department of Radiology

UMass Memorial Medical Center

55 Lake Ave North

Worcester, MA 01605

Phone: 781-718-4605

Fax: 774-441-6429

Email: carolynn.debenedectis2@umassmemorial.org

Purpose

The purpose of this project is to teach radiologists who perform image guided interventions effective communication skills. Complaints related to communication errors between Radiologists and patients during interventional procedures are not uncommon. Communication for Radiologists performing IR procedures can be challenging since they are meeting the patient for the first time on the day of the procedure. Good communication skills are important to foster a good doctor/patient relationship, which can improve clinical outcomes and even decrease litigation [1]. There is growing emphasis on communication skills/patient centered care in radiology [2]. This is evident given the American College of Radiology's Imaging 3.0 initiative in which the radiologist went from being only involved in reading, dictating, and transcribing the imaging study to being involved in the entire imaging process from initial consult to conveying the results of the imaging study to the patient or clinician. Simulation has been used to allow doctors to practice their communication skills in a safe setting and get

feedback on how to improve. Bell et al showed that using simulation with acting patients to teach communication and relations skills was found to be universally valued by all participants and was found to be preferred over simple observation [3]. While this study was not focused on radiologists specifically, other studies have suggested that the radiologist can benefit from simulation based communication skills training [4]. Additional training in the communication of abnormal results with patients has been shown to result in: greater professional satisfaction, decreased stress for the physician, and improved patient compliance. Allowing physicians to rehearse the actual communication skills through role play allowed for self-reflection which in turn improved physician communication skills [5]. Training courses that allowed physicians to practice delivering bad news improved performance and, more importantly, altered attitudes and beliefs about the importance of communication. Effects of this type of training were shown to be evident for as long as 12 months post training [6]. Accordingly, we decided the most effective way to train physicians who perform image guided interventions in effective communication skills was through simulation.

Methods

Curriculum

This study received an exemption from our institutions IRB and was determined not to be human subjects research. Participants were given a 30-minute pre-workshop lecture. The lecture reviewed the essential elements of effective communication as outlined by the Gap-Kalamazoo Communication Skills Assessment Form (GKCSAF, Appendix A) [7]. In addition, the lecture reviews scenario specific tips on how to effectively communicate with patients. The lecture was given by a radiologist with prior training and expertise in communication skills (3 years of experience), who also served as a facilitator for the workshop. The four simulation scenarios included: (1) informed consent, (2) changing or canceling an image guided procedure, (3) dealing with a combative patient, and (4) disclosing and apologizing for a medical error (Appendix B). We decided to use these scenarios after investigating which scenarios were related to the most patient complaints/issues in our tertiary care, academic department during image guided procedures. The participants took a pre-and post-workshop survey (Table 1). The survey is intended to assess the radiologists comfort in the 4 scenarios before and immediately after the communication skills training workshop. The radiologists assessed their comfort level with each of the scenarios using a 5-point Likert scale (1-strongly disagree to 5-strongly agree).

The Workshop

Three simulation workshops, involving 7 attending radiologists, were conducted in January of 2016. The simulation took place at the interprofessional Center for Experiential Learning and Simulation (iCELS) at the University of Massachusetts Medical School. Each radiologist received risk management CME credit (4.5 credits) for participating in the workshop. The criteria for choosing which radiologists were eligible to participate in the workshop was only that they perform image guided interventions of any kind as part of their job. Participation was voluntary on the part of the radiologist. The average years as an attending were 15 (range of 3.5-35) for the participating radiologists. The participating

radiologists had performed procedures for an average of 15 years (range of 3.5-35 years). They performed an average of 26 procedures per month (range of 15-50). The radiologists talk to an average of 6.4 patients each day (range of 2-10). The workshop itself consisted of: (1) the pre workshop survey (Appendix C), (2) a lecture on effective communication skills, (3) simulations of the 4 scenarios with one attending participating in each scenario with an acting patient (approx. 10 min) while the facilitator and the other radiologists observe via video, (4) after each simulation a debriefing session takes place identifying teaching points by the facilitator and observing radiologists (this was repeated for each of the 4 scenarios), and (5) the post workshop survey (Appendix C).

The lecture on effective communication skills is based on the essential elements of communication outlined in the GKCSAF and is in PowerPoint format. The lecture takes about 20-30 minutes to present and is presented by the session facilitator. The session facilitator should be a radiologist with prior communication skills training. A participant will then volunteer to simulate each scenario with a professional acting patient (a professional actor hired by our simulation center), ideally a different participant for each scenario, while the other participants observe the simulation. After each simulated scenario the facilitator will lead a debriefing session with the facilitator and the other participants. Teaching points based on the essential elements of communication are identified based on the participant's performance in the scenario. How well they execute each element of communication is assessed and feedback given. Each simulation and debriefing session usually takes 30-40 minutes per scenario. Each workshop lasted 4.5 hours.

Outcomes

The participants felt more comfortable in all the scenarios after the workshop with the most increase in comfort seen in dealing/communicating with combative patients and disclosing and apologizing for errors during image guided procedures (Table 2). These results suggest that at a minimum participation in this type of training increases physician comfort in these common communication scenarios that arise during image guided interventions. The results echo those found in similar studies which showed that using simulation to teach communication skills can increase physician comfort communicating in difficult scenarios [3-6]. One participant stated they strongly disagreed to all categories after the training, indicating that they did not feel the workshop made them feel more comfortable communication with patients in these difficult situations. Inadequate training in communication skills has been acknowledged by physicians as a major factor contributing to burnout [8]. With physician burnout being such an epidemic, training radiologists in effective communications skills may not only benefit the patients, but the physicians' job satisfaction as well [8,9]. One limitation of the study is that we did not measure if the radiologists communicated better with the patients after the workshop than before, as this is quite cumbersome to do. However, one would speculate, based on previous research that showed simulation is an effective way to improve doctors' communication skills, that their communication skills would improve [5,6,10]. Long term another interesting project would be to see if complaints and litigation related to poor communication between radiologists and patients during image guided intervention decreased after the workshop. Despite these limitations, this study suggests that communication skills

simulation workshops can be an important component of Radiologists' professional development and job satisfaction by increasing their comfort communicating with patients in these difficult scenarios.

References

1. Levinson W, Roter DL, Mullooly JP, Dull VT, Frankel RM. Physician-patient communication. The relationship with malpractice claims among primary care physicians and surgeons. *JAMA*. 1997 Feb 19;277(7):553-9.
2. Rawson JV, Moretz J. Patient- and Family-Centered Care: A Primer. *J Am Coll Radiol*. 2016 Dec; 13:1544-1549.
3. Bell SK, Pascucci R, Fancy K, Coleman K, Zurakowski D, Meyer EC. The educational value of improvisational actors to teach communication and relation skills: perspectives of interprofessional learners, faculty, and actors. *Patient Education and Counseling*, 2014; 96: 381-388.
4. DeBenedictis CM, Gauguet JM, Makris J, Brown SD, Rosen MP. Coming Out of the Dark: A Curriculum for Teaching and Evaluating Radiology Residents' Communication Skills Through Simulation. *J Am Coll Radiol*. 2017 Jan;14(1):87-91
5. Fallowfield L, et al. Efficacy of a Cancer Research UK Communication Skills Training Model for Oncologists: a randomized controlled trial. *Lancet*. 2002; 359: 650-6.
6. Fallowfield L, et al. Enduring impact of communication skills training: results of a 12 month follow up. *British Journal of Cancer*. 2003; 89(8): 1445-9.
7. Peterson EB, Calhoun AW, Rider EA. The reliability of a modified Kalamazoo Consensus Statement Checklist for assessing the communication skills of multidisciplinary clinicians in the simulated environment. *Patient Educ Couns*. 2014 Sep;96(3):411-8.
8. Ramirez AJ, Graham J, Richards MA, Cull A, Gregory WM. Mental health of hospital consultants: the effects of stress and satisfaction at work. *Lancet* 1996; 347: 724–28.
9. Restauri N, Flug JA, McArthur TA. A Picture of Burnout: Case Studies and Solutions Toward Improving Radiologists' Well-being. *Curr Probl Diagn Radiol*. 2017 Sep - Oct;46(5):365-368. doi: 10.1067/j.cpradiol.2016.12.006. Epub 2016 Dec 15.
10. Jenkins V, Fallowfield L. Can communication skills training alter physicians' beliefs and behavior in clinics? *J Clin Oncol* 2002; 20: 765–69

Question	1(strongly disagree)→5(strongly agree)
1. I feel very comfortable performing consent for image guided procedures.	1 2 3 4 5
2. I feel very comfortable talking to patients about having to change or cancel an imaged guided procedure.	1 2 3 4 5
3. I feel very comfortable dealing/communicating with combative patients during image guided procedures.	1 2 3 4 5
4. I feel very comfortable disclosing and apologizing for errors I made during an image guided procedure.	1 2 3 4 5

Table 1: Pre-and Post-workshop survey

Survey Question	% strongly agree PRE	% strongly agree POST	Δ
1. I feel very comfortable performing consent for image guided procedures.	71.4	85.7	+14.3%
2. I feel very comfortable talking to patients about having to change or cancel an imaged guided procedure.	57.1	71.4	+14.3%
3. I feel very comfortable dealing/communicating with combative patients during image guided procedures.	14.3	57.1	+42.8%
4. I feel very comfortable disclosing and apologizing for errors I made during an image guided procedure.	14.3	57.1	+42.8%

Table 2: Results of the pre-and post-workshop survey showing the change in how many of the participating radiologists strongly agreed that they felt comfortable in the scenarios before and after the workshop and the change in percentage.