

# The Influence of Communication and Relational Education on Radiologists' Early Posttraining Practice

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## DESCRIPTION OF THE PROBLEM

Historically, radiologists have received little educational preparation for conveying imaging results to patients, and few training models have been reported. The Program to Enhance Relational and Communication Skills for Radiologists (PERCS-Radiology) is a daylong workshop that combines didactic and educational media presentations with improvisational simulations between workshop participants and professional actors [1]. In 2014, we reported that radiology trainees who had participated in the workshops felt significantly more comfortable afterward with the specific key conversations on which the program is focused [1]. It was the first report of an empirically validated communication training program expressly designed for radiologists.

Outside radiology, similar simulation-based models for communication training have been found to enhance providers' confidence and comfort with patient-related communication, but questions remain about how effectively such training prepares learners for actual clinical experiences [2,3]. One key lesson is that communication and

relational training curricula must evaluate learners over time to determine how such training extrapolates to their practice in the future, and what factors influence their experience.

We therefore qualitatively explored the impact and perceived relevance of the PERCS-Radiology communication and relational education among former trainees who had graduated into practice.

## WHAT WE DID

Invitations to participate in this follow-up study were sent by e-mail to all former Boston Children's Hospital pediatric radiology fellows who attended PERCS-Radiology workshops from 2011 to 2013 and who had graduated the fellowship ( $n = 17$ ). Twenty- to 30-min semistructured qualitative phone interviews were conducted within 12 to 24 months after training for each former fellow who agreed to participate. Each interview was conducted by the same qualitative researcher (D.L.), who was previously unknown to the participants. Interviews were audio-recorded and transcribed verbatim for analysis.

Data analysis followed principles of thematic content analysis

[4]. All transcribed interviews were analyzed by a team of three researchers: the qualitative researcher (D.L.) and two psychiatry fellows (A.S. and S.F.), both of whom were unknown to the participants. Each team member individually read a number of transcripts, noting "a priori" and emergent themes. The team members then met to compare their themes to derive the initial coding framework. A second round of coding applied this coding framework to the transcripts, with two team members coding each transcript. The team met again to reconcile any differences and to refine the thematic framework. A final round of analysis checked for thematic saturation and searched the data for outliers to verify the final themes. Coders also compared the thematic data against key demographics of participants (length of time since training, gender and current practice setting) to check for any correlative patterns.

## OUTCOMES

Ten of 17 invitees agreed to participate (response rate, 59%). Table 1 shows key demographics of the study participants.

Table 1. Study participants

Interviewee	Gender	Date of PERCS Training	Current Employment
1	Male	2012	Radiologist, private practice
2	Male	2011	Pediatric radiologist, academic medical setting
3	Male	2012	Pediatric radiologist, academic medical setting
4	Female	2013	Pediatric radiologist, private practice
5	Male	2011	Radiologist, academic medical setting
6	Male	2011	Pediatric radiologist, academic medical setting
7	Female	2013	Radiologist, private practice
8	Female	2013	Pediatric radiologist, private practice
9	Male	2012	Diagnostic radiologist in private practice, with part-time academic appointment
10	Female	2012	Pediatric interventional radiologist, private practice

All interviewees valued the PERCS-Radiology experience and found the simulations with actors especially memorable and realistic. All appreciated the opportunity to observe and participate in simulations of difficult conversations in radiology (including discussing bad news, radiation risk, and error disclosure). Beyond this, two overarching main themes emerged from the data analysis: (1) multi-dimensional learning and (2) relationship to radiology culture and institutional support. These themes were not differentiated by gender, current practice setting (private or academic), or length of time since training. We outline the themes in the following discussion, and illustrative quotations from the interview data are presented in Table 2.

### Theme 1: Multidimensional Learning

All participants reported that the PERCS-Radiology education imparted new skills and knowledge related to communication and interpersonal relationships with patients and had relevance for their practice. Three subthemes emerged: salient skills,

knowledge, and conceptual learning; relevance of the education; and the longer term impact of education in practice.

**Salient Skills, Knowledge, and Conceptual Learning.** Participants reported enhanced communication skills and identified specific domains of requisite skill. Although the balance among skills, knowledge, and conceptual learning varied for different participants, 9 of 10 spoke of skills, knowledge, and conceptual learning, whereas one interviewee focused on skills/knowledge learning alone. Participants focused on newly acquired understanding about the dynamics of body language and nuances of verbal language in communicative encounters. They also identified the value of content knowledge in relation to specific enactments (on radiation risk in particular) as a key element of the learning.

For many participants, the workshop offered conceptual learning about what patient-centered communication means in practice, including the importance of being open to patients' questions and serving as a "guide" during difficult health care journeys.

**Relevance of the Education.** A second subtheme was the perceived relevance of the training after graduation into actual clinical practice. Nine participants (90%) found the training very relevant to their current work, although some judged specific scenarios as more or less relevant. One participant questioned the relevance of a simulation in which the radiologist directly discussed a finding with a patient. The scenario in which the radiologist needed to convey news of a missed diagnosis to the patient's family particularly stood out as relevant to many trainees. The simulation of communicating around radiation risk was universally seen as relevant to participants' practice.

**Longer Term Impact of Education in Practice.** The third subtheme that emerged was the potential for a direct long-term effect on how these participants communicated in actual practice. Some stated that the PERCS workshop had affected their subsequent practice or gave examples of ways they had internalized and now draw on the lessons from PERCS. One participant had a subsequent experience conveying bad news that was almost identical to a workshop scenario, and they drew directly from the knowledge and skills they gained from the workshop in their approach to the communication process. Others felt more confident and equipped to deal with such scenarios, which they had yet to experience but were sure would occur during their careers.

For some, PERCS-Radiology affected not only their personal practice but also their roles as educators. Some participants had already included ideas from the PERCS workshops in their own teaching

Table 2. Themes with illustrative data

Theme 1: multidimensional learning

Skills, knowledge, and concepts

- Body language is important, choice of words is important, empathy is important, showing emotions is appropriate as long as you don't take away from the parents and the kids. (I.10)
- Definitely the segment with data on radiation risk and future cancer risk. Because you actually have real numbers to present to parents. (I.4)

Relevance of education

- They [case enactments] were all relevant. I could envision them all happening. I haven't had to personally deal with them yet, but I can see them happening. So having been able to see people work through them was actually good too. (I.1)
- I thought that it was very apt to our daily practice and it is a situation that you hope that you never will be in but probably inevitably at some point in your career you will probably be faced with that situation. (I.9)

Longer term impact of education on current practice

- [It] helped me further realize that I'm not doing a bad thing by telling people what they need to know. (I.4)
- I remember thinking to myself going in there with a little bit of a plan was part of what I learned in the PERCS class... Making sure I was sitting down at her level, there were a couple things I remember doing at the PERCS that I did do there and I don't know if I've done it perfect every time since then but I try to incorporate some of those things when it's appropriate. (I.2)
- Now I am an attending, I use it [PERCS] as a model, on a smaller scale, to teach current residents ways to communicate. (I.3)

Theme 2: relationship to radiologic culture and institutional support

- Being a leader, being a guide, and shepherding the family at least to the next shepherd who can take over from there. That was certainly built upon and reinforced with all the modules to again not just [be] a shy, uninvolved doctor in the reading room but to really take charge and responsibility (I.2)
- It's a good reminder for radiologists that as a physician your bedside manners are super important. As a radiologist our patient interactions are limited, we're mostly in a darkened room, but some studies do require interaction with patients and it was great for that component of our work. (I.10)
- I think at the same time it has not been as applicable simply because as a radiologist we typically aren't the ones to give the bad news. (I.6)
- It's really difficult when full honesty exposes yourself so completely...and there are different agendas from the sake of what's best for the family and what's best for the hospital and the departments of liability. So that for me is a challenge then and now. And I think that's something that has to have a top down support for that to be really successful...So it [PERCS-Radiology] has impacted me emotionally, in practice I haven't gotten quite there yet, because of the challenges I discussed (I.5)

efforts, while others anticipated using those lessons with trainees in the future.

## Theme 2: Relationship to Radiology Culture and Institutional Support

Participants reflected on how PERCS-Radiology education related to both personal and institutional views of the role of radiologists more broadly within health care. The education encouraged some to consider the need for radiologists to “step out from the shadows,” while for others it reinforced their existing views of the need for radiology to

become more interactive and patient centered. Still others, however, felt that the role of the radiologist is limited by time and the extent of the perceived relationship with the patient. Many faced difficulties implementing or developing lessons from PERCS in their current practice, noting not only the constraints of time but also institutional support to make this possible. Others also thought that implementing lessons from PERCS would require broader professional changes in the perceived role of the radiologist.

In sum, participants carried important elements of what they

had learned in PERCS-Radiology workshops into their current practice. However, these early data suggest that for communication and relational learning to be truly retained, integrated, and enacted long term, even demonstrably effective educational experiences must be scaffolded with training in other elements of radiology professionalism and sustained within a supportive environment. To our knowledge, this study is the first to evaluate the impact of a communication and professionalism skills training program on former trainees' early practice experiences.

Our results align with evidence elsewhere that the climate of professionalism within which young physicians practice strongly influences the degree to which they can maintain their own ideals of professional conduct [5]. This is an essential issue for radiology that remains empirically underexplored.

## REFERENCES

1. Brown SD, Callahan MJ, Browning DM, et al. Radiology trainees' comfort with difficult conversations and attitudes about error disclosure: effect of a communication skills workshop. *J Am Coll Radiol* 2014;11:781-7.
2. Chi J, Verghese A. Improving communication with patients: learning by doing. *JAMA* 2013;310:2257-8.
3. Curtis JR, Back AL, Ford DW, et al. Effect of communication skills training for residents and nurse practitioners on quality of communication with patients with serious illness: a randomized trial. *JAMA* 2013;310:2271-81.
4. Boyatzis RE. *Transforming qualitative information: thematic analysis and code development*. London: Sage; 1998.
5. Liao JM, Thomas EJ, Bell SK. Speaking up about the dangers of the hidden curriculum. *Health Aff (Millwood)* 2014;33:168-71.

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