

Video Observation With Guided Reflection: A Method for Continuing Teaching Education

Sarah B. Merriam, MD, MS

Brielle Spataro, MD, MS

Megan E. Hamm, PhD

Melissa A. McNeil, MD, MPH

Deborah J. DiNardo, MD, MS

ABSTRACT

Background Best practices for faculty development programs include longitudinal, practice-based formats incorporating experiential learning with opportunities for reflection and community building. Peer coaching for faculty development provides personalized, learner-centered, work-based learning. Implementation of traditional 1-on-1 peer coaching programs is challenging due to time, logistics, and methodological barriers.

Objective We sought to improve observation and reflection skills and to expand personal teaching practices of clinician educators.

Methods In 2016, we developed and evaluated an innovative “1-to-many” peer-coaching model utilizing large group review of video-recorded teaching encounters. Forty-three clinician-educator faculty in general internal medicine at the University of Pittsburgh attended at least 1 of 6 sessions between February and August 2016. Sessions were moderated by a master facilitator who guided direct observation of, and reflection on, observed teaching and highlighted efficacious teaching methods. The study evaluated the acceptability and efficacy of this novel faculty development program qualitatively, with semistructured, postcurriculum telephone interviews with 20 participating faculty.

Results All respondents stated that they would continue to attend faculty development sessions and would recommend them to others. The most frequently cited advantages included exposure to new teaching strategies, direct feedback, safe environment, community of practice, and growth mind-set, yet barriers emerged, such as discomfort reviewing video, difficulty giving feedback across hierarchy, and initial skepticism. None described the curriculum as critical or unsafe. Most reported increased self-reflection and adoption of new teaching behaviors.

Conclusions This peer-coaching, video-based faculty development program was well received, feasible, and effective in changing self-reported teaching attitudes and practices.

Introduction

High-quality clinical teaching is a key expectation in every residency training program.¹ To be effective clinical teachers, faculty must develop and maintain a breadth of skills across many domains. Faculty development programs are essential to keeping up skills, and they help improve attitudes toward teaching, knowledge of educational principles, and teaching skills.^{2,3} Longitudinal programs that deliver relevant and work-based content, utilize experiential learning, and provide opportunities for feedback and reflection are ideal, in accordance with principles of adult learning theory.^{2,4} Peer coaching is 1 means to provide highly personalized, learner-centered, work-based learning. Although peer coaching may occur in small groups, existing models of peer coaching for faculty development involve partnerships between 2

faculty members to improve teaching.⁵ Three phases of peer coaching for teaching skill development have been described: (1) preobservation discussion to identify personal learning objectives, context, expectations, and process; (2) direct observation by the peer coach; and (3) postobservation debriefing sessions in which observations are shared, constructive feedback is provided, and shared reflection and discussion occur.⁶ This integration of self- and joint reflection with constructive feedback in a supportive environment leads to improved teaching skills, incorporation of new strategies, and long-term changes in practice.⁷⁻⁹ The joint reflection inherent to peer coaching can have a positive effect on the coach and the faculty member being coached.¹⁰

Studies of peer coaching have described logistical challenges to enrollment and sustainment, such as schedule coordination, and the time- and resource-intensive nature of longitudinal programming.¹¹⁻¹³ By providing an unbiased, external perspective, video mitigates the inaccuracy of physician self-assessment and provides an opportunity for “out-of-the-moment”

DOI: <http://dx.doi.org/10.4300/JGME-D-17-00692.1>

Editor's Note: The online version of this article contains the semistructured interview script.

iterative review.¹⁴ Video review of individual sessions for kindergarten through 12th grade teachers was effective in facilitating reflection and improving teaching practice across varied measures.¹⁵ Within residency education, most studies describe 1-on-1 video coaching in the context of a patient encounter.^{16–19} Recently, that technology was used in coaching teaching skills development for faculty facilitators of problem-based learning.⁹

In 2016, we developed, implemented, and evaluated an innovative “1-to-many” model of peer coaching, involving faculty across a spectrum of teaching expertise. The aim of our faculty development program was to improve observation and reflection skills and to expand teaching practices of clinician-educators charged with resident teaching. In addition to being efficient, we hypothesized the peer-coaching model would allow the group to benefit from exposure to a variety of teaching styles via participation in an interactive discussion of the observed teaching encounter. We designed a program that sought to mitigate previously described logistical barriers of 1-on-1 peer coaching and to impart readily applicable, skills-based, take-home points, in keeping with established best practices of faculty development.²

Methods

Setting and Participants

The hour-long video review session was embedded in a preestablished, weekly, academic half-day faculty development series in the University of Pittsburgh’s Division of General Medicine. The longitudinal series included a journal club, research seminar, academy of master educator’s lectureship, and faculty development series rotating on a weekly basis. The target audience included clinician educators, research faculty, and fellows. Participation was voluntary, yet strongly encouraged; protected time was granted to facilitate attendance. Forty-three clinician-educator faculty attended at least 1 of 6 pilot sessions delivered monthly between February and August 2016. On average, 20 to 25 faculty members attended each video discussion session.

Program Description

The curriculum followed 4 steps (FIGURE). Using a smartphone, participants recorded teaching encounters and were instructed to focus video footage on the teacher, with the goal of capturing verbal and nonverbal teaching behaviors. Videos were stored on a secure, cloud-based platform. Faculty predominantly chose to video small group, conference room-based, inpatient teaching sessions with both medical

What was known and gap

Effective approaches for faculty development allow for peer interaction and reflection, yet can be challenging to implement.

What is new

An innovative “1-to-many” peer coaching model utilizing large group review of video-recorded teaching encounters.

Limitations

The session built on an existing faculty development program; voluntary participation may have introduced selection bias.

Bottom line

Coaching entailed guided direct observation of, and reflection on, observed teaching and resulted in changes in self-reported teaching attitudes and practices.

students and residents, although ambulatory and classroom videos were also represented. No videos of teaching on rounds were made to avoid including patient-identifiable data. Faculty obtained verbal consent from all learners prior to recording sessions. Faculty members reviewed their videos, reflected on the teaching encounter, and selected a 5-minute clip to show during the large group review session with a specific question for group feedback. Two faculty video clips were reviewed during each hour-long, large group session, held monthly over 6 months. Faculty in attendance were encouraged to observe the videos (looking for stimulus-response teaching behaviors). The session leader guided the group to give global feedback on exemplary skills, before providing comments relevant to the presenter’s self-identified focus.²⁰ Observations were translated into skills-based teaching points (eg, learners were asked to take 2 minutes and write their answer to increase participation and engagement and to set high standards for learners by rewarding complete answers, not partially correct ones). Sessions concluded with participants committing to try a new teaching strategy, with the goal of consolidating and applying learning.²¹ The primary author (S.B.M.) was available to address technical questions regarding obtaining, editing, and uploading video footage. Otherwise, the authors did not have a role in curricular implementation.

Program Evaluation

We used a qualitative approach to better understand participants’ perceived motivators and barriers to participation, and the impact of the intervention on individual reflective practice and incorporation of new teaching behaviors. A qualitative approach is well suited for exploratory, descriptive research and affords a deeper understanding of efficacy and acceptability.^{22,23} We conducted 1-on-1 telephone

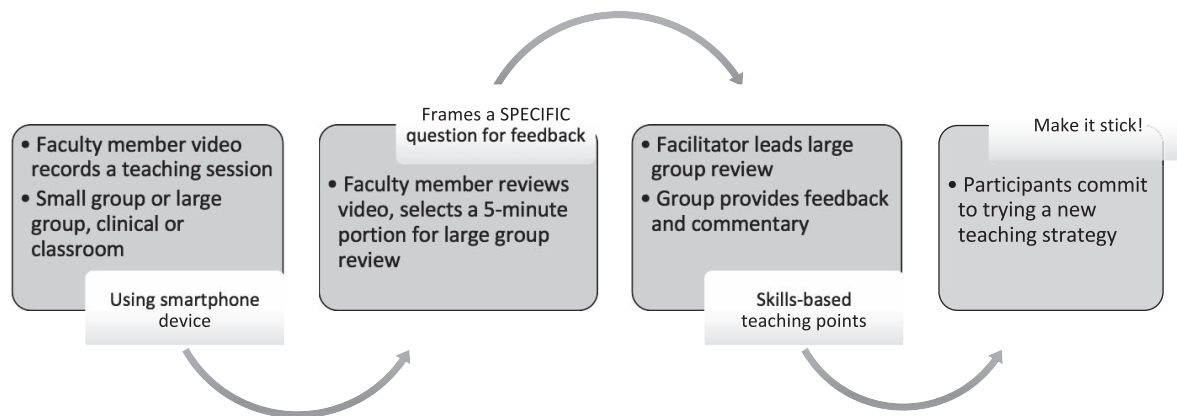


FIGURE
Overview of Video Review Curriculum

interviews with a semistructured script (provided as online supplemental material) to encourage respondents to reveal their perspectives candidly and in greater depth. When interviewees provided more general responses, interviewers used “probes,” or follow-up questions, designed to encourage participants to give specific examples or more detailed responses.²⁴ At the beginning of the interview, participants answered questions about faculty rank, sex, and frequency of attendance.

All participating faculty were invited to interview, and 24 responded. To ensure we captured responses from faculty across a spectrum of rank, experience, and degree of curricular participation, we used stratified purposeful sampling to recruit a final sample of 20 participants.²⁵ Participation was not compensated.

Data Collection

In October 2016, an experienced interviewer not affiliated with the creation or implementation of the curriculum conducted confidential, 20-minute interviews. All conversations were audio-recorded, de-identified, and transcribed verbatim.

This project was designated exempt by the University of Pittsburgh Institutional Review Board.

Analysis

Using established qualitative methods,²⁶ the primary author (S.B.M.) inductively developed a codebook, as the authors did not have preexisting notions of how physicians would respond to interview questions.²⁷ Two authors (S.B.M. and B.S.) independently compared coding on 6 of 20 transcripts (30%) in 3 rounds, using ATLAS.ti software (Scientific Software Development GmbH, Berlin, Germany). After each round, coders resolved discrepancies through discussion. Codes were further refined using the constant

comparative method.²⁸ Triangulation (coding of the data by more than 1 investigator) was employed to ensure consistency of interpretation.^{22,25} Although “thematic saturation” was achieved by the 12th interview, we interviewed all 20 physicians who communicated interest to respect their time and willingness to participate. Final codes were grouped into themes and sorted within 2 main categories: (1) advantages of, and barriers to, participation, and (2) effect of the curriculum on teaching and reflective practices. To establish the credibility of the results, we performed member checking in real time; the interviewer frequently restated and clarified participants’ responses to ensure correct interpretation. We also performed synthesized member checking after all interview data had been analyzed, and provided ability for comments.²⁹ This did not identify any need for further analysis or revision. To ensure reflexivity in data collection and analysis, authors discussed different reactions to, and interpretations of, the data during research meetings.

Results

We conducted interviews with clinician-educator faculty across a range of rank, sex, and degree of participation (TABLE 1).

Advantages of, and Barriers to, Participation

All respondents stated that they would continue to attend faculty development sessions and would recommend participating to others. Regarding helpful curricular aspects, participant responses revealed 5 central themes: exposure to new teaching strategies, direct feedback, safe environment, community of practice, and growth mind-set.³⁰ Exemplar quotations are included in TABLE 2.

TABLE 1

Characteristics of All Faculty Participants and a Subset Submitting a Video for Review (From a Study of a Video Review Faculty Development Program)

Characteristic	All Participants, No. (%) (N = 20)	Submitted Video, No. (%) (N = 10)
Rank		
Medical education fellows	6 (30)	5 (50)
Junior faculty	7 (35)	2 (20)
Senior faculty	7 (35)	3 (30)
Female	12 (60)	5 (50)
Attendance		
1 session	4 (20)	1 (10)
2 sessions	5 (25)	1 (10)
≥ 3 sessions	11 (55)	8 (80)

Exposure to New Teaching Strategies, Coded in 19 of 20 Interviews: One widely espoused benefit of the curriculum was exposure to new teaching strategies directly through video observation and indirectly through roundtable discussion. Participants, especially senior faculty, described feeling siloed in their clinical teaching and appreciated the opportunity to expand their approach in terms of content or delivery. Some were inspired by particularly innovative or exemplary teaching, while others benefited from troubleshooting challenges and brainstorming strategies for success.

Direct Feedback, Coded in 17 of 20 Interviews: Many commented the curriculum provided a rare opportunity to give and receive real-time feedback on teaching skills. Those who submitted videos uniformly reported they experienced that feedback as both formative and validating, confirming effective teaching behaviors and alleviating insecurities. Two participants endorsed a desire for more constructive feedback to highlight areas for improvement. Both acknowledged that this may jeopardize the safety of the learning climate.

Safe Environment, Coded in 13 of 20 Interviews: Several structural elements of the curriculum were identified as conducive to a safe learning environment, deemed by participants as a necessary precursor for dialogue. Being able to choose which video segment to review was described as empowering, since faculty could decide how “risky” the teaching encounter was that they would share. Participants also noted the importance of the facilitator in eliciting targeted feedback in response to specific questions and guiding nonjudgmental and supportive dialogue. Finally, respondents felt that reviewing teaching encounters from faculty across all ranks helped eliminate hierarchy.

Community of Practice, Coded in 8 of 20 Interviews: Several participants noted the program

fostered a sense of community and collaboration. Peers were described as akin to coaches, dedicated to a shared mission of providing high-quality teaching.

Growth Mind-Set, Coded in 7 of 20 Interviews: Participants perceived that the program normalized the idea that all faculty, regardless of experience, face teaching challenges and benefit from feedback and shared experience. Exposure to new teaching skills empowered some participants to try new teaching techniques.

Participants identified 3 barriers to participation: the discomfort of video review, initial skepticism about curricular efficacy, and junior faculty members’ challenge of giving feedback to more senior faculty. Exemplar quotations are included in TABLE 2.

Perceptions of Video Review as Uncomfortable, Coded in 8 of 20 Interviews: Participants variably described review of videos as inherently anxiety provoking, despite acknowledging a safe environment and the formative potential of video submission. Two participants recalled anticipating an unsafe environment, although neither described the actual experience of showing their video as such.

Initial Skepticism, Coded in 3 of 20 Interviews: Some described feeling dubious about the quality and/or impact of peer feedback on teaching behavior prior to participating. After attending, these participants reported finding the sessions to be of great value.

Challenge of Giving Feedback to Senior Faculty, Coded in 4 of 20 Interviews: Both junior and senior faculty identified the challenge of giving feedback to senior faculty. Some participants perceived senior faculty to be less open to feedback. Sessions when only senior faculty presented were described as laudatory, with a less-robust discussion of teaching challenges.

TABLE 2

Themes Related to Perceived Advantages and Barriers of a Video Review Faculty Development Program

Perceived Advantages	
Theme	Supporting Quote
Exposure to new strategies <ul style="list-style-type: none"> ▪ Innovative teaching ▪ Exemplary teaching ▪ Troubleshooting challenges and brainstorming strategies for success 	“It was really cool to see this interesting thing that he was doing that I never would have thought to do.” “He did an amazing job taking this clinical presentation back to the physiology. When I go forward [I will] try to connect things to physiology more.” “It’s easy to watch a session and say, ‘That went well . . .’ But hearing others’ reasoning about <i>why</i> was helpful. I learned a lot about how people who don’t think like me saw the same teaching session.” “[It was] helpful to hear different perspectives surrounding how people handle the challenging aspects of teaching.”
Direct feedback <ul style="list-style-type: none"> ▪ Formative ▪ Validating 	“Reinforcing what I was doing well and what I should stick with, but also providing suggestions for specific instances [where] I wanted feedback.” “I didn’t even realize that was something I was doing but now it’s something that I’ll make sure I do every time.”
Safe environment <ul style="list-style-type: none"> ▪ Specific question ▪ Facilitator role ▪ Faculty involvement across all levels of rank 	“Since you pick your own challenge, it is a safe zone.” “It made it easier to offer opinions because [presenters] asked for them in a specific way.” “[The facilitator] was nonjudgmental and really encouraged people to look at what they liked and how it could be done better.” “If we’d just [observed] junior faculty . . . the junior faculty in the room would have felt like, ‘Oh, this is something because we’re junior.’”
Community of practice	“It’s nice to have a stress-free hour to think about how to do things better. It’s a nice team-building exercise . . . to feel better about what we do and like we’re working toward a common goal.”
Growth mind-set	“It promotes the idea that we’re always learning, always getting better.” “[The curriculum] allows me to be a little bit braver, or more adventurous, in terms of techniques I might be willing to try.”
Perceived Barriers	
Theme	Supporting Quote
Video review is uncomfortable	“You’re exposed; there are people that you respect and peers in the room. You don’t want to be perceived as not doing a good job.”
Initial skepticism	“Initially I thought it was kind of silly . . . I felt like it was teaching Formula 1 car drivers how to drive faster. As time went on, I felt like it was useful because I picked up some [new] techniques.” [About a colleague]: “He had a low expectation of the feedback he was going to get . . . [But] he felt inspired to change some of his techniques. That actually got me excited to [participate], because it changed his opinion.”
Challenging to give feedback to senior faculty <ul style="list-style-type: none"> ▪ Across hierarchy ▪ Perceived to be less open to feedback 	“It was a little uncomfortable as a junior faculty member to give feedback or suggestions to more senior faculty members.” “If [senior faculty] had said, ‘I’m an experienced teacher but I really want feedback, I value hearing from other people,’ it would lower that barrier.”

Effect on Teaching Practice

Twelve participants reported they increased their reflection on teaching after the program. One noted, “I’ve already started thinking about what strategies I’m going to implement to keep my learners engaged.” Another identified the framework as a facilitator for individual reflection: “It’s like you carry the group around in your head, and say, ‘What would the rest of the group say about that teaching session?’” Thirteen participants reported an increased ability to change

teaching behavior after faculty development. At the time of the interview, 12 participants had implemented a learning point taken from a session and an additional 6 planned to do so in the future. The most frequently cited learning points included strategies to increase participation, promote self-directed learning, maximize efficacy of teaching tools (eg, handouts, articles), and effectively use nonverbal teaching cues. Participants reported that concrete examples of observed behaviors facilitated learning: “Instead of an abstract discussion . . . we could talk very

specifically about certain wording that was used, about certain things done to set the learning climate, about positioning in the room.” All who reported no change in reflection or teaching behavior ascribed this to the impact of prior training (eg, postresidency teaching programs that incorporated 1-on-1 observation of teaching).

Discussion

Using peer review of videotaped teaching encounters, this faculty development program for clinician educators corroborates previous work identifying video review as a unique and powerful tool for collaborative learning, especially when combined with a guiding framework to focus reflection and feedback.^{14,15,19} The method was useful, and acceptable to highly motivated faculty enrolled in a structured, longitudinal faculty development program. It is less time- and resource-intensive than conventional 1-on-1 peer coaching models.^{12,13}

Our model is well-situated within existing conceptual frameworks for peer coaching and adheres to established guidelines for implementing such programs.^{12,31} We identified similar themes related to the benefits of peer coaching.¹¹ Our findings reinforce existing literature and suggest using peer coaching and focused reflection in a safe environment provided a rare opportunity for direct feedback on clinical teaching. It affords a “window into practice,” which serves as a springboard for discussion around various approaches to teaching and fosters a growth mind-set. As such, it reinforces prior work demonstrating that the joint reflection inherent to peer coaching positively influences the peer coach(es) in addition to the individual who is coached.¹⁰ Thus, the teaching moment is leveraged across a number of faculty members. By honing deliberate observation skills and actively engaging faculty in comparative thinking and reflection, the program fostered a community of practice necessary for the incorporation of new teaching behaviors.

Limitations of this study include that it was conducted at a large academic center with a well-developed and well-attended faculty development series. Participation was voluntary, and participants may have responded more favorably to the intervention. Finally, we do not know whether this faculty development program had any lasting impact on teaching practice and cannot generalize the findings to other settings.

We suggest that attempts at similar interventions within other institutions should prioritize some essential considerations, including the need to identify skilled facilitators, to secure institutional support, and to engender faculty buy-in across all ranks. To

normalize the discomfort of video review and foster a safe and collaborative environment, we highlight the importance of ongoing programming that uses facilitators trained in core skills involved in teaching communication (eg, obtaining learning goals, reflection, facilitating nonjudgmental brainstorming, close observation, and specific behaviorally based feedback) to lead discussion.²⁰

Conclusion

A peer-coaching, video-based, longitudinal, self-directed faculty development program was well received and sustained over time. General medicine faculty reported changing teaching attitudes and practices. This novel program may inform the development of similar group-based, peer-coaching interventions across a broad array of graduate medical education programs targeted to faculty or trainees within resident-as-teacher curricula.

References

1. Spencer J. Learning and teaching in the clinical environment. *BMJ*. 2003;326(7389):591–594.
2. Steinert Y, Mann K, Anderson B, et al. A systematic review of faculty development initiatives designed to enhance teaching effectiveness—a 10-year update: BEME guide No. 40. *Med Teach*. 2016;38(8):769–786.
3. Skeff KM, Stratos GA, Mygdal W, et al. Faculty development: a resource for clinical teachers. *J Gen Intern Med*. 1997;12(suppl 2):56–63.
4. Knowles MS. *The Adult Learner: A Neglected Species*. 3rd ed. Houston, TX: Gulf Publishing; 1984.
5. Steinert Y, Macdonald ME, Boillat M, et al. Faculty development: if you build it, they will come. *Med Educ*. 2010;44(9):900–907.
6. Flynn SP, Bedinghaus K, Snyder C, et al. Peer coaching in clinical teaching: a case report. *Fam Med*. 1994;26(9):569–570.
7. McLeod PJ, Steinert Y. Peer coaching as an approach to faculty development. *Med Teach*. 2009;31(12):1043–1044.
8. Ross JA, Bruce CD. Teacher self-assessment: a mechanism for facilitating professional growth. *Teach Teach Educ*. 2007;23(2):146–159.
9. Garcia I, James RW, Bischof P, et al. Self-observation and peer feedback as a faculty development approach for problem-based learning tutors: a program evaluation. *Teach Learn Med*. 2017;29(3):313–325.
10. Sekerka LE, Chao J. Peer coaching as a technique to foster professional development in clinical ambulatory settings. *J Contin Educ Health Prof*. 2003;23(1):30–37.
11. Bolliat M, Elizov M. Peer coaching and mentorship. In: Steinert Y, ed. *Faculty Development in the Health*

- Professions: A Focus on Research and Practice*. Dordrecht, the Netherlands: Springer; 2014:159–179.
12. Huston T, Weaver CL. Peer coaching: professional development for experienced faculty. *Innov High Educ*. 2008;33(1):5–20.
 13. O’Keefe M, Lecouteur A, Miller J, et al. The colleague development program: a multidisciplinary program of peer observation partnerships. *Med Teach*. 2009;31(12):1060–1065.
 14. Davis DA, Mazmanian PE, Fordis M, et al. Accuracy of physician self-assessment compared with observed measures of competence. *JAMA*. 2006;296(9):1094–1102.
 15. Tripp T, Rich P. Using video to analyze one’s own teaching. *Br J Educ Technol*. 2012;43(4):678–704.
 16. Edwards A, Tzelepis A, Klingbeil C, et al. Fifteen years of a videotape review program for internal medicine and medicine-pediatrics residents. *Acad Med*. 1996;71(7):744–748.
 17. Martin D, Regehr G, Hodges B, et al. Using videotaped benchmarks to improve the self-assessment ability of family practice residents. *Acad Med*. 1998;73(11):1201–1206.
 18. Bonrath EM, Dedy NJ, Gordon LE, et al. Comprehensive surgical coaching enhances surgical skill in the operating room: a randomized controlled trial. *Ann Surg*. 2015;262(2):205–212.
 19. Elliott DL, Skeff KM, Stratos GA. How do you get to the improvement of teaching? a longitudinal faculty development program for medical educators. *Teach Learn Med*. 1999;11(1):52–57.
 20. Fryer-Edwards K, Arnold RM, Baile W, et al. Reflective teaching practices: an approach to teaching communication skills in a small-group setting. *Acad Med*. 2006;81(7):638–644.
 21. Brown PC, Roediger HL III, McDaniel MA. *Make It Stick*. Cambridge, MA: Harvard University Press; 2014.
 22. Giacomini MK, Cook DJ. Users’ guides to the medical literature, XXIII: qualitative research in health care B—what are the results and how do they help me care for my patients? Evidence-Based Medicine Working Group. *JAMA*. 2000;284(4):478–482.
 23. Sofaer S. Qualitative methods: what are they and why use them? *Health Serv Res*. 1999;34(5, pt 2):1101–1118.
 24. Stewart D, Shamdasani PN, Rook DW. *Focus Groups: Theory and Practice*. Thousand Oaks, CA: Sage Publications; 2007.
 25. Patton MQ. *Qualitative Research and Evaluation Methods: Integrating Theory and Practice*. 4th ed. Thousand Oaks, CA: Sage Publications; 2002.
 26. Crabtree BF, Miller WL. *Doing Qualitative Research*. 2nd ed. Newbury Park, CA: Sage Publications; 1999.
 27. Hsieh HF, Shannon SE. Three approaches to qualitative content analysis. *Qual Health Res*. 2005;15(9):1277–1288.
 28. Bradley EH, Curry LA, Devers KJ. Qualitative data analysis for health services research: developing taxonomy, themes, and theory. *Health Serv Res*. 2007;41:1758–1772.
 29. Birt L, Scott S, Cavers D, et al. Member checking: a tool to enhance trustworthiness or merely a nod to validation? *Qual Health Res*. 2016;26(13):1802–1811.
 30. Dweck CS. *Mindset: The New Psychology of Success*. New York, NY: Random House; 2006.
 31. Siddiqui ZS, Jonas-Dwyer D, Carr SE. Twelve tips for peer observation of teaching. *Med Teach*. 2007;29(4):297–300.



Sarah B. Merriam, MD, MS, is Clinical Instructor, Department of Medicine, VA Pittsburgh Healthcare System; **Brielle Spataro, MD, MS**, is Assistant Professor, Department of Medicine, Boston University School of Medicine; **Megan E. Hamm, PhD**, is Assistant Professor, Department of Medicine, and Director of Qualitative, Evaluation, and Stakeholder Engagement Research Services, University of Pittsburgh School of Medicine; **Melissa A. McNeil, MD, MPH**, is Professor, Department of Medicine, University of Pittsburgh School of Medicine; and **Deborah J. DiNardo, MD, MS**, is Clinical Instructor, Department of Medicine, VA Pittsburgh Healthcare System.

Funding: The Competitive Research Fund of University of Pittsburgh Medical Center Shadyside and Shadyside Hospital Foundation.

Conflict of interest: The authors declare they have no competing interests.

An earlier version of this manuscript was presented as a poster at the Society of General Internal Medicine 39th Annual Meeting, Hollywood, Florida, May 11–14, 2016.

Corresponding author: Sarah B. Merriam, MD, MS, VA Pittsburgh Healthcare System, University Drive, Pittsburgh, PA 15240, 412.576.7800, fax 412.360.6290, sullivanbs@upmc.edu

Received September 18, 2017; revisions received January 28, 2018, and April 8, 2018; accepted April 9, 2018.