ORIGINAL RESEARCH

Multiple Goals Theory and Communication Quality Analysis for Fellows Communication Training

Lauren J. Van Scoy[1,2], Allison M. Scott[3], Heather Costigan[1], John Madara[1], and David Chu[1]

[1]Department of Medicine and [2]Department of Humanities and Public Health Sciences, Penn State University College of Medicine, Hershey, Pennsylvania; and [3]Department of Communication, University of Kentucky, Lexington, Kentucky

ORCID ID: 0000-0003-0984-1474 (L.J.V.)

ABSTRACT

Background: End-of-life communication skills are vital to high-quality critical care. Patients and families often report deficiencies in end-of-life communication by providers. However, formalized training is difficult to implement and study on a large scale. Furthermore, curricula are often designed with early-stage clinical trainees in mind and are not tailored to advanced clinician learners.

Objective: The goal of this pilot study was to explore educational and practical implications of using Multiple Goals Theory (MGT), Communication Quality Analysis (CQA), and communication logs as a three-pronged, reflective communication curriculum for advanced trainees.

Methods: We describe design and qualitative evaluation of a novel, pilot, longitudinal curricular intervention for pulmonary and critical care fellows and program directors at a tertiary academic medical center. The 2-year longitudinal communication curriculum incorporates *1*) a theoretical framework from communication science (MGT), with

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Correspondence and requests for reprints should be addressed to Lauren J. Van Scoy, M.D., Division of Pulmonary, Allergy, and Critical Care, Department of Medicine, Humanities, and Public Health Sciences, Penn State University College of Medicine, 500 University Drive, H041, P.O. Box 850, Hershey, PA 17033. E-mail: lvanscoy@pennstatehealth.psu.edu.

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2) a novel training modality of analyzing audio-recorded intensive care unit family meetings (CQA), and *3*) written communication logs after an intensive care unit family meeting.

Results: The sample included 13 pulmonary and critical care medicine fellows and two program directors. Qualitative thematic analysis was conducted on seven fellow interviews and on 23 communication logs completed. Four themes emerged from interviews: *1*) fellows incorporated the skills into real-life practice and found the curriculum useful and valuable; *2*) a key takeaway from MGT was the deemphasis of task goals; *3*) CQA was an engaging opportunity for self-reflection and learning; and *4*) written communication logs were perceived as helpful in theory but too burdensome in practice. Findings from analyses of the communication logs included that most fellows' writing was brief and without substantial reflection.

Conclusion: Many scholars have argued that communication theory can impact practice, but few have recognized the potential of theory and methods, such as MGT and CQA, as educational tools. Our findings demonstrate that MGT is a feasible and useful theoretical framework for improving communication skills among advanced trainees, and CQA fosters meaningful self-reflection about practice. Communication logs were not feasible or useful training tools in this context, but CQA workshops helped fulfill the goals of narrative reflection. Next steps are to implement this curriculum in more programs and measure changes in behavior acquisition and clinical care.

Keywords:
communication; medical education; qualitative research; family meetings

KEY POINTS

- **Question:** How do pulmonary/critical care fellows perceive a longitudinal, easy-to-implement communication skills training designed around communication theory and methods?
- **Findings:** Content analysis of in-depth interviews and narrative communication logs demonstrated that the training was perceived as novel and valuable, particularly for later-stage trainees who desire more nuanced education for honing their communication skills. Rating audio-recorded family meetings for communication quality provided opportunity for reflection and a means of crowdsourcing effective communication strategies and helped clinicians find their own footing as communicators.
- **Meaning:** Communication theory and methods provide an easy-to-implement and positively perceived framework communication training for pulmonary/critical care fellows.

A NOVEL APPROACH TO PULMONARY AND CRITICAL CARE FELLOW COMMUNICATION TRAINING USING MULTIPLE GOALS THEORY AND COMMUNICATION QUALITY ANALYSIS

Patients and families consistently rate end-of-life communication skills as vital to high-quality care; yet, they report major deficiencies in the quality of clinician communication (1–8). Because accrediting bodies for medical schools and graduate medical education mandate communication as a core competency (9–11), a number of communication training programs have been developed, but these communication training frameworks have yet to be evaluated on a large scale. Such trainings are often resource-intensive, requiring standardized patients, full- or half-day workshops with scheduling barriers, or

time-consuming online modules (12–16). Most training programs are designed with early-stage clinical trainees in mind and are not tailored to advanced trainees (those at the level of a fellow or higher) who desire a deeper understanding (15, 16). In addition, many of these training approaches are atheoretical and neglect to incorporate any communication theory.

To address these limitations, we developed a simple, longitudinal, and easily replicated communication curriculum that incorporates *1*) a theoretical framework from communication science (Multiple Goals Theory [MGT]) (17, 18), with *2*) a novel training modality of analyzing audio-recorded intensive care unit (ICU) family meetings (Communication Quality Analysis [CQA]) (19, 20), and *3*) written communication logs after an ICU family meeting.

MGT (17, 18) states that communication involves balancing three goals (Table 1): task (e.g., making patient-centered care decisions), relational (e.g., affirming the clinician–family relationship), and identity (e.g., respecting others' autonomy, appropriately tailoring communication) (21). High-quality communication occurs when a person attends to all three goals (17). However, the three goals often compete with one another during challenging conversations, so that accomplishing one goal may come at the expense of pursuing another goal. Communication that successfully attends to all three goals is more effective than communication that ignores one or more goals (17).

MGT is operationalized in the analytic method CQA. CQA is a rigorous method for assessing the quality of communication on the basis of the degree to which participants pay attention to the three salient goals identified in MGT. Specifically, in CQA, third-party observers rate how well individuals attend to two domains for each goal, including task goals (domains of content and engagement), relational goals (domains of emotion and relationships), and identity goals (domains of face and accommodation).

We saw potential for using MGT as a tool for communication training for pulmonary and critical care medicine fellows and developed a three-pronged curriculum that involved *1*) didactic training in MGT; *2*) a workshop using CQA (19, 20), the MGT-based rating method; and *3*) communication logs, which were a form of narrative reflection. Our guiding question was, Are MGT, CQA, and communication logs useful and feasible curricular tools for training fellows in communication skills?

METHODS

Setting and Participants

The study, which was approved by the IRB, occurred at Penn State Hershey Medical Center across two academic years (2021–2023 with 5 curricular hours per year). The sample included 13 pulmonary and critical care medicine fellows who participated in various aspects of the data collection, as shown in Table 2, with a total of seven interviews and 23 communication logs; two program directors completed interviews. To avoid risk of deidentification, demographic data were not collected. Participation in the curriculum was mandatory, but research participation was voluntary. The study was approved by the Penn State College of Medicine Institutional Review Board (protocol 00018832).

Study Design

This was a qualitative evaluation of a longitudinal curricular intervention with

Table 1. Conversation Quality Analysis codebook: abbreviated domain definitions

Goal	Domain	Brief Definition
Task	Content	Discussion of clinically relevant topics (e.g., exploring values/beliefs relevant to treatment options); providing discrete directions for care (e.g., making decisions); elaborating on reasons for treatment choices, discussing prognosis
	Engagement	Paying attention; tracking with the conversation; asking others to elaborate on statements; elaborating on viewpoints; asking/answering questions; being engaged
Relational	Emotion	Expressing vulnerability or intense emotions; disclosing personal experiences and thoughts; discussing or acknowledging hardships; offering emotional support and empathy; acknowledging the other's emotion
	Relationships	Establishing rapport; affirming the value of relationships; showing a desire to repair relationships; building consensus; showing empathy
Identity	Face	Showing approval and respect for others; respecting autonomy; affirming others' values or beliefs; listening with intent to understand; expressing a wish to honor others' wishes; considering impact of decisions on others
	Accommodation	Tailoring communication to the other person's needs; not being patronizing or condescending; not oversimplifying or overemphasizing; ignoring others' contribution to the conversation; being scripted/robotic; going through the motions

three curricular components spread as evenly as possible across the academic year (Table 3). The first didactic session began with a 1-hour overview of MGT and its application to patient–clinician communication in critical care contexts. Content was developed by several authors, whose interdisciplinary expertise included clinical care, communication science, and graduate medical education. Subsequent training sessions involved CQA workshops (19), in which participants reviewed a rating sheet with 7-point Likert-type rating scales assessing various dimensions of task, identity, and relational goal attention (*see* Figure E1 in the data supplement); listened to sections of audio recorded ICU family meetings in 5-minute increments; independently completed the rating sheet for each communicator in the recording; and discussed ratings as a group. These audio-recordings were obtained using an institutional consent form that grants permission to make audio-recordings of clinical encounters for educational purposes. A clinician who was not a member of the care team made the request to the family to allow the audio-recordings for the purposes of use in the communication curriculum. Finally, fellows completed two communication logs (Appendix E1) per year to reflect on how

Table 2. Training years of fellow participants

	Completed Interviews ($n = 7$ interviews)		Completed Communication Logs ($n = 23$ logs completed by 13 fellows)	
Subject No.	2022*	2023†	2022	2023
1	1	—	2	—
2	0	0	2	1
3	0	0	2	1
4	1	—	2	—
5	1	1	2	1
6	1	—	2	—
7	0	0	1	0
8	0	0	2	0
9	0	0	1	0
10	—	1	—	0
11	—	1	—	1
12	—	0	—	0
13	—	0	—	2
Total by academic year	4	3	16	7
Total by training year	Total $N = 7$ $n = 2$ post-graduate year 4; $n = 2$ post-graduate year 5; $n = 3$ post-graduate year 6		Total $N = 23$ $n = 7$ post-graduate year 4; $n = 8$ post-graduate year 5; $n = 8$ post-graduate year 6	

— = not applicable because participant was not in the program that year. To prevent inadvertent identification, subject identifiers are not aligned with academic years.
*2022 = three completed interviews, one refusal, five no responses.
†2023 = three completed interviews, four refusals, three no responses.

task, relational, and identity goals were achieved during their family meetings. All fellows gave verbal consent for their logs to be included in analyses.

Data Collection and Analysis

Participants engaged in semistructured one-to-one interviews in which they shared perceptions of the curriculum (*see* interview guides in Appendixes E2 and E3). After verbal informed consent, 30-minute interviews were conducted by phone or videoconference by a research assistant who is trained in qualitative interviewing and has no ongoing relationship with the fellows. Program directors participated in the same capacity as fellows in the interviews (i.e., fellows and program directors were asked the same set of interview questions). Interviews were recorded and transcribed verbatim. Participants received $20 stipends. Fellow and program leadership interview data were analyzed together. Two analysts independently performed qualitative descriptive analysis (22), an inductive analytic

Table 3. Summary of longitudinal curricular design, timeline, and data collection

Curricular Element	Description	Year 1		Year 2	
		July–December	January–June	July–December	January–June
Didactic lecture	1-h MGT overview	X		X	
CQA conference	2 h per session; CQA ratings of audio-recordings	X	X	X	X
Communication logs	2 logs/yr completed by fellow after ICU family meeting	X	X	X	X
End-of-year fellow interview (research element optional)	30-min phone interview		X		X
Program director interview	30-min phone interview				X

Definition of abbreviations: CQA = Communication Quality Analysis; ICU = intensive care unit; MGT = Multiple Goals Theory.

approach that foregrounds the face value of participants' reports, and a third analyst reviewed the interview data. Themes were created by integrating analysts' coding patterns and agreed upon by all three analysts. We verified that thematic saturation was reached after review of 20% of the data, evidenced by the range of perspectives on the curriculum represented in our analysis and by the fact that all participant responses are well reflected in the findings (23). The independent coding patterns were very similar among all three analysts, and few coding conflicts occurred, because we used an analytic method that privileges the face value of participant reports and thus leaves little open to analytic interpretation. Differences in opinion among the analysts about how to combine and label the final set of themes were resolved through discussion until true consensus was reached. Additional COREQ (Consolidated Criteria for Reporting Qualitative Studies) qualitative rigor reporting guidelines are summarized in Appendix E4.

Communication logs were deidentified and thematically analyzed to explore how fellows described their communication experiences and how they applied MGT in practice. Descriptive content analysis (24), a deductive analytic approach, was performed by two analysts using MAXQDA 2020 software (25). Analysts reviewed 20% of the narrative data independently to inductively identify broad thematic categories. The analysts merged their categories and subcategories into a preliminary codebook, which they then used to code 20% of the data using the constant comparison method (26). Interrater reliability was calculated, discrepant codes were adjudicated, and final definitions and exemplar quotes were confirmed. This final codebook was used by both analysts to code the remainder of the data. The final interrater reliability was calculated at 0.73. MAXQDA was used to report frequency counts and percentages.

RESULTS

Training years of the fellows who completed the seven interviews and 23 communication logs are shown in Table 2.

Themes from Fellow and Program Leadership Interviews

Theme 1. All fellows and program leaders interviewed perceived MGT to be a novel and valuable framework for training, and most said they incorporated the skills into their real-life practice. Fellows unanimously expressed appreciation for the structure of MGT and demonstrated accurate recall of the theory and its definition of high-quality communication (i.e., balancing the three goals). MGT appeared to be particularly helpful for fellows who are at a stage in training where understanding why certain communication behavior is effective. Fellow 5 explained:

> As a junior trainee, I would already potentially be trying to be humanizing, and I would try and talk about things that weren't germane to the medical conversation but were hopefully going to build trust. But when you're doing that in the beginning without an overarching framework like the Multiple Goals Theory provides, you're doing it in trial and error. … MGT adds a more advanced dimension to individual communication. Instead of having a prescriptive script and checklist of things to review, you're imagining at all times a balance of three competing goals.

Fellow 4 said that MGT provides a helpful framework to draw upon to help hone their skills:

> [MGT is] a framework of why and how, which is more important. It is hard to improve upon your own skills and workshop your own communication ability if you don't have an overarching framework to think about. MGT has been able to provide a way of reflecting on experiences and then trying to figure out how to make small, but definitive, iterative improvement and changes.

Fellows also expressed appreciation for the practicality and real-world use of MGT. Several said applying MGT allowed them to "self-audit" their communication by making adjustments using the three-goal approach in the moment during family meetings. Fellow 4 said:

> It's a useful approach, providing a self-guided feedback mechanism in the moment of trying to evaluate how a conversation is going and also trying to diagnose why maybe the conversation isn't going as well as you think it should be. It has significant clinical relevance.

Fellow 5 likened the MGT approach to conversational improvisation:

> It's trying to basically teach you conversational improv, how to recognize when one goal is overriding the others, and maybe that's appropriate, but it's also telling you to be paying attention and aware for when another goal would be more important to use and how to slowly shift the conversation from, for example, something that's more task-focused to something that's more personhood focused.

Some fellows recognized how MGT differs from the communication skills training frameworks they had previously experienced (e.g., setting, perception, information, knowledge, empathy, sympathy [27], name, understand, respect, support, and explore [28], value, acknowledge, listen, understand, and elicit [29]) by facilitating more natural conversations. Fellow 3 said MGT allowed communication that felt more realistic by moving "beyond those mnemonics," saying:

> I feel like many [mnemonics] are very prescriptive or algorithmic, and it doesn't stick with me whenever I'm actually in a patient encounter. When looking at other communication curriculum that are out there or some of the mnemonics that are used, I have a tough time implementing those.

Although MGT was a new approach to all the fellows and program leadership, as a curricular tool, it was engaging and well received by fellows. Program Director 2 said:

> They took it seriously; they were engaged in this. There weren't people on their phones

> as much as other conferences. They were listening more; they were giving feedback more. It seemed like they were engaged. Fellows tend to respond to things that are directly clinically relevant. This topic is extremely clinically relevant. It provides structure to something that historically doesn't have a lot of structure when it comes to lecturing fellows. There's a lot of potential in training fellows and even residents with this model.

Theme 2. A key takeaway from MGT was the deemphasis of task goals. Several fellows shared that the MGT curriculum made them more aware of their task-focused communication and highlighted new appreciation for including relational and identity goals in their communication with equal priority. Fellow 3 explained:

> It reminds me that it's important to put my task on the back burner a little bit, to take more time to learn about the patients and families to try to build that trust, whether it's by learning what's important to them, what they've been through, just having a little bit more of a conversation, having them know that I care about them more than just my task. Because I think people can really sense when you roll in with an agenda, and I think that really harms the care.

Fellow 1 reflected on how MGT had impacted their attention to concerns beyond task goals:

> It's definitely helped me change. I can remember from my first year here, everything was task-oriented. Like, "You need DNR, you need DNR. This is futile care" versus now [my approach is] "Okay, let's take a step back and look at everything else."

Others noted that the MGT framework helped them to attend to relational and identity goals in a way that differed from their previous training. Fellow 2 said:

> We're taught to be empathetic and good listeners, but it's sometimes hard to know how to actually achieve those things. I think this format helps you to remember that the relationship between us and the family is really important in achieving those goals, that the identity of the patient and the family, where they come from, who they are, what's important to them is also critical in getting to the task at hand.

Similarly, Fellow 6 shared:

> In the back of my head, probably in the back of many people's heads, we say, "I talk to patients all the time, what is this [curriculum] really going to add?" But getting examples of and talking about how to put those relational goals into the conversation and the focus on the importance of those has been the most memorable and helpful. Really being intentional about putting those relational goals upfront.

For some participants, MGT helped reframe what counts as success in clinical conversations, as Fellow 3 explained:

> We were taught to get our tasks done, and that's how we operate as physicians and how we can be efficient, so it's reverse learning to try to put that on the back burner. But that's really what I've taken away, that if you go in and you don't achieve your task, you haven't failed, or if the nurses or the other providers are still mad at you, the code status is the same, or they still want dialysis, or whatever it is, that doesn't mean we've failed. There's a lot more to it than just did we achieve our task. And I think that's been really refreshing, because we often do feel bad. We go in thinking, "I have to make this happen." So that's kind of the communication takeaway, just having a different outlook about the way that we communicate, that it's to build relationships and build trust and do the best thing for the patient. And sometimes that doesn't just get achieved in one meeting. And if we focus more on their relational and identity goals, that in the end, hopefully, we will do the best thing for the patient and family.

Theme 3. CQA workshops were an engaging opportunity to self-reflect, hear others' approach to communication, and analyze family meetings in a detailed fashion. Fellows reported that

analyzing audio-recorded family meetings was a clinically applicable and practical way of incorporating MGT into their communication skills. Fellow 1 noted how CQA tapped into his analytical thinking in a way that traditional training did not:

> I think [CQA workshops] were really helpful. More helpful than the standardized patients that we've had in the past, mainly because you're analyzing conversation, and then you have to really think about what aspects of Multiple Goal Theory were used. I like to analyze data and information. When you're given the audio recordings, it's really helpful, at least for me and how my brain works.

Fellow 11 highlighted the value of showing how the theory plays out in real conversations through CQA:

> [The CQA workshop] was the one that I definitely found the most helpful out of all of the sessions, because it was more hands-on seeing, "This is what they're actually talking about in this topic," rather than just having somebody tell me "This is what we're looking for." The real-world examples made it sink in a lot better.

Similarly, program leadership noted the educational value of CQA as a training tool. Program Director 1 said:

> Being able to go through a recording and talk through what went well, what didn't go well, and get different people's perspectives on it, I think has been very helpful, and a very different experience than just being able to talk to the fellow who actually ran the [encounter]. I think being able to dispassionately analyze things like this, in a completely relaxed setting, has a role.

Fellows whose own recordings were analyzed appreciated an opportunity to self-reflect on their own communication and receive feedback from peers. Fellow 5 said:

> I think the most useful thing is being able to either reflect on your own recordings if they're there and hear what other people are saying about them, or to build a repository of what other people say, try, and do, because communication style is obviously a very experiential process. I think that's one of its greatest strengths.

Nearly every participant commented on how the self-reflection built into CQA allowed them to better find their own style of communicating. Fellow 1 said:

> I think a lot of us all have our own styles, which are unique, but it was good to see others' perspectives on how they handle situations, compare it with your own, and then maybe incorporate some things from their repertoire into your own practice.

Although CQA was enjoyed by most, the detailed nature of CQA analysis was viewed by some as "nitpicky" or too time-consuming. Fellow 5 noted that the scoring aspect of CQA had less educational value than the discussing the "good" and "bad" aspects of the communication more generally, saying:

> I know that we dived down into CQA and the nature of coding, which I thought was perhaps less clinically or educationally relevant.

Similarly, Fellow 4 acknowledged sometimes feeling

> frustrated by some of the nitty-grittiness of the CQA, getting bogged down in the detail of the exact coding of the section of the conversation, which sometimes detracts from the overall goal.

Theme 4. Communication logs were perceived as helpful in theory but too burdensome to incorporate in practice. Although the fellows commented on the value of self-reflection, several noted it was impractical to take time away from clinical work to respond to narrative prompts in the communication logs. Fellow 10 said:

> Abstractly, it sounds great, but it was just very annoying to have to break away from the urgent work of the unit to do that.

Similarly, program leadership noted the difficulties of encouraging fellows to meaningfully engage with the communication logs, despite efforts to keep them simple and streamlined. Program Director 1 said:

> There is a lot of data on the use of narrative reflection as a teaching tool, and it is very useful, if people do it. At the end of the day, though, you're asking fellows who are busy clinically to do another thing.

Results from Communication Logs

For the 23 communication logs, frequencies of coded responses to the item "What is your premeeting task goal?" are shown in Table 4. Approximately one-half (52.2%) of the fellows indicated their meeting task goal was to provide a medical update or share medical information. Three themes emerged from qualitative analysis of the logs: *1*) fellows' primary premeeting concerns were related to how family members would respond to the meeting; *2*) most fellows wrote that they achieved their goals and that the meeting went well; and *3*) reflections were brief and succinct, with a minority engaging in substantive reflection. Table 5 reports themes and quotations.

DISCUSSION

In this pilot investigation, we solicited critical care trainees' perceptions of MGT-based communication skills training and how such training has impacted their clinical practice. We found that MGT provides a useful theoretical framework that was well received by fellows and program leadership. Specifically, participants reported that the approach was novel and valuable, that it helped reframe how they approached ICU family meetings in practice, and that it facilitated self-reflection. There are at least three key implications of these findings.

First, our results demonstrate the merit of applying communication theory (MGT) and method (CQA) to clinical education. Clinical educators may benefit from adopting MGT as a training framework, given at least three advantages that it offers over other commonly used training frameworks: *1*) It is easier to implement

Table 4. Premeeting task goals ($n = 23$ communication logs with 33 instances of an identified task code*)

Goal	No.	% (Out of 23)
Provide a medical update	12	52.2
To make care decisions (code status, procedures, etc.)	10	43.4
Understand family member goals, prognosis, or expectations	4	17.4
Understand patient's medical preferences or end-of-life wishes	1	4.3
Disclosure of medical errors	1	4.3
Create a safe space and environment	1	4.3
Build rapport	2	8.7
Review of personhood	1	4.3
Other	1	4.3

*Codes are not mutually exclusive; therefore, total percentage is >100%.

Table 5. Themes, subthemes, and examples from fellows' communication logs

Theme/Subtheme	Example Log
Theme 1. Fellows' primary premeeting concerns were related to how family members would respond to the meeting.	
"Family-focused" worries	Log 1, first-year fellow: I worry that, despite the updates over the phone, they will not understand the patient's current clinical condition and prognosis.
Concerns about negative emotional reactions	Log 5, third-year fellow: I am worried about the fixation of the unknown of the family (i.e., I cannot predict the future). I expect it will go well and they will be understanding, but they might push back and like to pursue continued aggressive treatment, given the uncertainty of the future.
Theme 2. Most fellows wrote that they achieved their family meeting goals and perceived that the meeting went well.	
Explicitly naming multiple goals	Log 16, second-year fellow: I was able to achieve my identity goals by allowing the mother and sister the space to explain what the patient enjoyed, what he means to their family, and give them the time to explain what former rehabilitation periods have accomplished/challenges therein. Log 17, second-year fellow: The things that went well during the meeting were that I was able to relay how severely sick this patient was, that there was very little that we could offer this patient at the time. I was able to at least accomplish part of my task goal, which was providing the patient's wife information about the fact that he is actively dying, and she seemed to understand that. Log 21, first-year fellow: I felt comfortable with this patient and family and attended to my relational goals from the outset of this encounter, and I think it really helped the entire goals of care conversation I later had with them. I used words such as "the last several weeks and months must have been exhausting," and "it sounds like [the patient] knows what she wants at this point in her life." I think this told them that I was attentive to what they were saying as opposed to following my own task goals, such as obtaining consent for a central line. Instead, the patient and family decided that the patient did not want any further procedures, etc.
Alluding to relational and identity goals without naming them	Log 24, third-year fellow: I was able to hear about their lives, history with previous therapies, and choices for naturopathy (wife had been widowed before decades prior), but I didn't necessarily learn much from them about the patient.

Table 5. *Continued.*

Theme/Subtheme	Example Log
Theme 3. In their reflections, most fellows' writing was brief and succinct, whereas a minority engaged in substantive reflection.	
"Missed opportunities"	Log 16, second-year fellow: I wish that we would have had members from all treatment teams in the room (hepatology and I were there, but not surgery). It is difficult to answer technical surgical questions without that expertise.
Lack of expanding in a reflective way	Log 8, third-year fellow: Naming emotion is something I am constantly working to improve. Log 4, second-year fellow: I feel that I could have done better with relational.
Substantive reflective work	Log 15, third-year fellow: Perhaps I came off too strong or was too focused on my task. However, in the ICU, I do think it is important that we be upfront and say that we will do everything to resuscitate a patient unless the patient/family tell us otherwise. I'm not sure how to get around that.

Definition of abbreviation: ICU = intensive care unit.

during family meetings, because it does not require memorization of a mnemonic device or checklist (as many other communication skills training frameworks do); *2*) MGT offers a clear way to adjust communication in the moment when things go awry (i.e., consider if any of the three goals has been ignored), whereas other communication training frameworks neglect to emphasize how to troubleshoot when communication goes poorly; and *3*) MGT offers a deeper understanding of "why" certain communication techniques are recommended and actually work rather than presenting a list of "do" and "don't do" behaviors, as other commonly used training frameworks do. This is why, although traditional frameworks may be helpful for early learners, MGT appeared to be particularly well suited for advanced trainees, such as pulmonary and critical care fellows.

Second, from a feasibility standpoint, MGT and CQA are relatively easy and streamlined to use as training tools that do not carry substantial costs other than labor associated with obtaining audio-recordings and transcription of the recordings (if desired). The curriculum entailed a 5-hour time commitment per academic year, so it can be added to fellowship training even if there is not much lecture time built into the curriculum. In addition, only one faculty champion is needed to implement this approach. In the present study, we had buy-in from multiple leaders, but the curriculum was taught by only one on-site faculty member, so the approach does not require significant time commitment from multiple faculty members to provide beneficial training for fellows.

Third, CQA appears to be a novel training tool that may help improve communication skills. Many scholars have argued that theory can impact clinical practice, but fewer have recognized the potential of communication methods, such

as CQA, to change practice. This study shows that using an analytic method (i.e., rating observable interactions using CQA) prompted reflection, provided a means of crowdsourcing effective communication strategies, and helped clinicians find their own footing as communicators. Fellows were receptive to using their own recordings, found it useful to get feedback on their own performance, appreciated seeing how others approach difficult conversations, and welcomed having a forum for normalizing the experiences and emotions they typically encounter in these situations.

Moreover, CQA appeared to better facilitate self-reflection than the communication logs, which did not result in high-quality reflection, likely because of a lack of buy-in from fellows due to the added burden of completion. Fellows tended to log concerns about family response, not about their own communication skills, suggesting that logs did not stimulate true self-reflection. By contrast, CQA workshops prompted more meaningful self-reflection through a structured format that was built into the trainees' existing dedicated conference time. Thus, CQA workshops may be a more effective way to accomplish the educational goal of self-reflection.

One area for improving the CQA-based training may be to begin by coding for overall goals (i.e., task, relational, identity) and then moving to coding for specific domains (i.e., content, engagement, emotion, relationship, face, accommodation). The reason for this is that some fellows found the detailed coding with six domains to be tedious at times, so streamlining the coding to assess three goals may improve the buy-in for trainees who do not enjoy such a detailed level of coding. It is a credit to the MGT-based training that the coding can be tailored to the preferred level of detail, demonstrating again how flexibly this approach can be implemented.

Limitations

The scale of the investigation was small, including a single site and a small sample (with only half of the participating fellows completing an exit interview), which introduces the possibility of social desirability bias. Because several authors hold leadership or supervisory roles in the fellowship, we prioritized a "lighter touch" recruitment over frequent requests and reminders to avoid perceived coercion for the fellows. Thus, we erred on the size of fewer participating fellows rather than pursuing additional participants with additional requests. It is possible that fellows with negative perceptions of the curriculum chose not to participate more than those with positive perceptions, which could impact findings. However, this concern is mitigated by our findings that our fellows frequently and freely voice concerns about other aspects of the training, suggesting they were comfortable sharing their frank perceptions about their training. Second, in this preliminary assessment, only level 1 outcomes from Kirkpatrick's model of assessment (participant reactions) are discretely measured, although some level 2 outcomes (learning) and level 3 outcomes (behavior) are suggested from the qualitative results that emerged during analysis (30, 31). Last, some communication logs were completed *post hoc* because of busy clinical responsibilities. Now that feasibility and acceptability have been established, we will pursue additional sites to help with replicating this research over time with a larger sample, quantitative metrics, and assess outcomes focused on behavior

acquisition to evaluate the impact of MGT-based training on clinical practice.

Conclusions

This study demonstrates that MGT is a feasible and useful theoretical framework for improving communication skills among advanced, fellow-level trainees in critical care medicine and that CQA fosters meaningful self-reflection that impacts practice. Communication logs were not feasible or useful training tools in this context, but CQA workshops helped fulfill the goals of narrative reflection. Next steps are to implement this curriculum in more programs and measure changes in clinical practice.

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