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# Serious Illness Communication Skills Training during a Global Pandemic

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## ABSTRACT

**Background:** Communication skills is a core competency for critical care fellowship training. The coronavirus disease (COVID-19) pandemic has made it increasingly difficult to teach these skills in graduate medical education. We developed and implemented a novel, hybrid version of the Critical Care Communication (C3) skills with virtual and in-person components for pulmonary and critical care fellows.

**Objective:** To develop and implement a new hybrid virtual/in-person version of the traditional C3 serious illness communication skills course and to compare learner outcomes to prior courses.

**Methods:** We modified the C3 course in 2020 in response to the COVID-19 pandemic by adapting large-group didactic content to an online format that included both virtual asynchronous and virtual live content. Small-group skills training remained in person with trained actors and facilitators. We administered self-assessments to the participants and compared with historical data from the traditional in-person courses beginning in 2012. After the 2020 course, we collected informal feedback from a portion of the learners.

**Results:** Like the traditional in-person version, participants rated the hybrid version highly. Learners reported feeling well prepared or very well prepared over 90% of the time in most communication skills after both versions of the course. Over 90% of participants in both versions of the course rated the specific course components as effective or very effective. Feedback from the learners indicates that they prefer the virtual didactics over traditional in-person didactics.

**Conclusions:** Pulmonary and critical care fellows rated a hybrid version of a communication skills training similarly to the traditional in-person version of the course. We have provided a scaffolding on how to implement such a course. We anticipate some of the virtual components of this training will outlive the current pandemic based on learner feedback.

**Keywords:**
communication; medical education; virtual learning

The coronavirus disease (COVID-19) pandemic has caused a major disruption in global education, including graduate medical education. In-person attendance at workshops, conferences, and other professional training events has been halted. Hands-on skills training, which includes bedside teaching, procedural training, simulation, and other skill-based education, is particularly affected because it traditionally relies on in-person interaction with experts and deliberate practice for skill acquisition. This type of experiential learning cannot be replicated in a module or other passive educational modalities.

It is well documented that goals-of-care communication in the intensive care unit (ICU) is suboptimal (1, 2) and may be associated with surrogates' developing symptoms of post-traumatic stress (3). Professional organizations such as the Accreditation Council for Graduate Medical Education and American Thoracic Society have called for serious illness communication skills training for intensivists with an emphasis on patient- and surrogate-centered decision-making (4, 5). Training programs have responded with communication skills training, such as the Critical Care Communication (C3) course, which increases learner communication skills with a combination of brief didactics and deliberate practice through role-play (6).

The major response to the critical gap in education caused by this pandemic has been to leverage virtual technologies (7). Some educational content such as lectures and small-group sessions can be replaced using online courses and interactive web-conferencing platforms. However, a major challenge in graduate medical education is to replicate interactive encounters that include deliberate practice. One example is the experience of practicing serious illness communication skills in clinical encounters with patients and families using role-play.

We created a novel, hybrid version of the C3 serious illness communication skills course for critical care fellows that leverages both virtual technology and in-person deliberate practice. Here, we report on the structure of this program and the learner outcomes compared retrospectively with traditional courses that were held completely in person.

## METHODS

### Program Description

C3 is a 3-day communication skills training program for fellows training in critical care medicine that has been previously described (6). Briefly, the C3 curriculum includes short didactic talks, faculty demonstration of skills, and faculty-supervised small-group skills practice sessions with simulated families. Fellowship program directors require first-year Department of Medicine Pulmonary/Critical Care fellows and first-year Department of Critical Care

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This article has a related editorial.

Medicine Critical Care fellows to attend the C3 program, which is taught annually in the Fall. We adapted this program to a hybrid virtual model that would be suitable for teaching these skills during a global pandemic, during which in-person gathering is limited. We divided this hybrid model into three components: *1)* virtual didactic content, *2)* virtual live activities called drills, and *3)* in-person small-group role-play. This study was exempt under the University of Pittsburgh Institutional Review Board (study 20110412).

## Communication Skills Curriculum

The curriculum and learning objectives for this course are summarized in Table 1 and Figure 1. The main communication skills of this course are described by the acronym REMAP (reframing the big picture, expecting emotion, mapping values, aligning with values, and proposing a plan) (8). REMAP is a talking map for serious illness communication developed by the not-for-profit organization VitalTalk. The first skill is reframing or giving a headline. We define a headline as containing medical information and what that information means for the patient's future. The next skill is expecting and responding to emotion. We use the NURSE acronym (naming, understanding, respecting, supporting, exploring) (9) to teach empathic responses to emotions that often occur after the headline. The next skill is mapping out what values are important to the patient in the current clinical context. We divide these into three categories: *1)* prior conversations/advance directives, *2)* hopes and worries, and *3)* trade-offs. The next skill is aligning with the elicited values, which often includes a summary statement of those values. The final skill is proposing a plan based on the values elicited.

## Pedagogic Approach

We deliberately developed the hybrid curriculum by leveraging technology to use principles of adult learning theory (10, 11). Each of the 3 days followed a similar format with a variety of activities aimed at learner engagement and skill acquisition (Figure 1).

We started each day with a virtual, live greeting. The learners then had allotted time to complete virtual didactic content in the form of online modules on core communication skills. This content was presented in multimedia format including text and video. Interspersed within the content were opportunities for the learner to put the skills into practice through a case scenario or multiple-choice question. The learner would often need to complete a small task before moving on to the next screen, and they would receive intermittent feedback.

Learners would then join their assigned small groups for virtual, live activities that we call drills. Drills are activities that allow the learners to focus their practice on specific skills before embedding the skills in their interactions with the simulated patients. We used drills to bridge the didactic portions of the course with the role-play sessions. We included them in these courses as drilling lent itself to the virtual format.

Educational drills have been described primarily in K-12 education and sports (12). However, drills have not been described specifically in communication skills training literature. Drills have the advantage of allowing the learner to practice small parts and skills in isolation while staying close to real-life experience (13). This is a form of deliberate practice that allows learners to focus on a skill that is at their learning edge rather than practicing the entire task. Much like playing a sport,

**Table 1.** Critical care communications skills and learning objectives

| Communication Skills | Learning Objectives | Examples |
|---|---|---|
| Day 1 | | |
| Reframe | To deliver serious news in the form of a clear, concise headline that contains medical information and meaning | "Your mother's infection is getting worse, and her organs are failing. We are worried she is not going to survive." |
| Empathy | To respond to emotions with empathy | "I can't imagine what you are going through." "You have taken great care of your mom." |
| Day 2 | | |
| Mapping values | To collect data on the values and goals that are most important to the patient given the clinical context | "Given the current situation, what is most important to your mom?" |
| Day 3 | | |
| Aligning | To summarize the values and goals that are most important to the patient | "I'm hearing you say that your mom values being at home with family and would want to avoid being in a facility, dependent on others. Is that right?" |
| Propose a plan | To make a recommendation based on the values data | "Based on what is most important to your mom, I recommend that we focus exclusively on her comfort." |

drills are a way for the learner to practice a specific skill repetitively with rapid feedback. In our experience, breaking down and practicing the individual communication skills seen in the didactics prepares the learners to integrate the skills in the role-play sessions. Furthermore, this type of deliberate practice is a key element in adult learning and helps keep adult learners engaged (14).

The learners had time for lunch and to travel to their in-person role-play activity, which lasted the afternoon. The role-play was conducted using the pedagogic approach as previously described in the C3 program (6). In each case, the fellows met with a simulated patient family once daily. The patient's condition evolved over time to mirror a typical clinical situation in the ICU and allow the fellows to establish a relationship with the family. In the first encounter, the main objective is for the fellow to deliver the serious news as a clear, concise headline and then to respond to emotions with empathy. In the second encounter, the fellow mapped out what values and goals would be important to the patient given their situation. In the

| | Virtual Didactics: Online Modules | Live Virtual Drills | In-person Skills Practice: Roleplay |
|---|---|---|---|
| **Day 1** | • Reframe/deliver serious news<br>• Expect emotion | • Formulate a headline<br>• Use empathy | **Case 1: 23-year-old man with Meningococcal meningitis complicated by severe neurologic deficits.** |
| **Day 2** | • Mapping values | • Formulate questions to elicit values and goals | **Case 2: 60-year-old man with metastatic colon cancer who developed Pneumococcal sepsis.** |
| **Day 3** | • Aligning with values<br>• Propose a plan | • Summarize the values<br>• Make a recommendation based on the values | **Case 3: 84-year-old woman, nursing home resident with dementia who was admitted for a urinary tract infection and developed a large stroke.** |

**Figure 1.** Hybrid course curriculum outline.

third encounter, the fellow aligned with the values and made a recommendation based on these values.

The role-play teaching methodology was adapted from the not-for-profit organization VitalTalk. Each encounter with the family would begin with asking for a volunteer fellow and obtaining that fellow's learning goal for the encounter. The learner would then have an encounter with the simulated family member. At any point in the encounter, the learner or the facilitator could "time out," and the group would brainstorm ideas on the learner's self-identified learning opportunity. The learner would then go back into the role-play and try one suggested idea. At the end of the encounter, the facilitator would assist the learner in making a teaching point for them to try in the future.

### Hybrid Curriculum Development

*Virtual didactic content—online modules.* We developed online interactive modules that the learners completed asynchronously during allotted time at the beginning of each day. The didactic content was mapped onto the major components of the course. Day 1 material included reframing/giving a headline and responding to emotion. Day 2 included mapping values. Day 3 included aligning with values and proposing a plan.

The didactic content was modified from existing didactics used in the prior in-person courses with a focus on engagement and interactivity. Each online module began with a set of learning objectives emphasizing the key skills being taught. Questions throughout encourage learner engagement and participation in the content. After the learner responds to each question, they receive feedback with data from the medical literature as well as expert clinicians. When discussing the specific communication skills, the module offers helpful phrases, the reasoning for these phrases, and phrases to avoid. For example, when eliciting the patient's understanding and perspective, the module suggests trying "What have you been told about your medical condition?" and avoiding "What is your understanding?" so the patient does not feel like they are

being quizzed. Learners were given examples of words to use for each skill and then asked to formulate the words themselves. For example, when discussing headlines, the module gives examples of effective and ineffective headlines, and then the learner practices formulating headlines to presented clinical scenarios. Each module included a video demonstration of the skills taught and asked the learners to write down the skillful phrases they heard. The modules concluded with a knowledge skills check consisting of multiple-choice questions.

*Virtual live activities—drills.* Drills are new activities to this hybrid version of the course that are meant to provide specific skills practice to bridge the gap between the didactics and the live role-play. The drill on Day 1 consisted of giving a headline. We gave the learners three case scenarios and asked them to formulate the serious news in the form of a clear headline. The clinical content of the three cases varied to include both survival and functional prognostic data. Facilitators presented a case scenario, and the learners would have time formulate how to deliver the serious news in the form of a headline in the chat. The group then reviewed the headlines with opportunities to reflect and make revisions.

There were two drills on Day 2. The first drill was to practice formulating mapping questions. We gave the learners a clinical case and asked them what questions they would ask to learn about the patient's values and goals. We emphasized three categories of mapping questions: *1*) prior conversations about end-of-life wishes, *2*) hopes and worries given the situation, and *3*) trade-offs or what the patient would or would not be willing to accept in this situation. The second drill on Day 2 addressed how to respond to difficult

statements that patients or families might state during a goals-of-care conversation. Learners practiced responding to these statements with emotion rather than interpreting them as cognitive statements that should be answered directly (15). For example, if a family member responded to the headline with "there must be something more you can do," learners would practice responding to this statement with empathy, stating, for example, "I cannot imagine what you are going through."

The drill on Day 3 asked the learners to take patient values data we give them and make a statement that aligns with those values followed by a recommendation based on those values. We gave three clinical scenarios and sets of values that included preferences for life-sustaining care, comfort-focused care, and a time-limited trial of life-sustaining therapies.

*In-person role-play.* The second half of each day contained in-person role-play. This role-play is identical to the prior in-person courses. The fellows completed this role-play in assigned small groups that consisted of other learners, two trained facilitators, and one to two trained actors. This role-play included three cases developed to represent varied but common ICU scenarios (Figure 1). The cases developed sequentially each day to mimic the clinical progression of a typical ICU case. The in-person role-play was conducted in rooms large enough to accommodate social distancing, and all participants wore simple face masks.

## Data Collection and Analysis
### *Evaluation of the hybrid curriculum.*
We administered self-assessments to participants after the C3 course. The questions included learner demographics, self-reported competence in communication skills, and course satisfaction. Self-

assessment items used a 5-point Likert scale.

Three months after the hybrid 2020 course, we collected informal feedback from a subset of the participants. This feedback included questions about their experiences with family meetings since the course, including what has been going well, what aspects of the course were most helpful, what has been most difficult, and what would be most helpful for future practice and skill improvement. Nine participants completed this feedback, and we are reporting the feedback related to the new hybrid format.

***Comparison of the hybrid curriculum to the traditional in-person course.*** We compared the 2020 hybrid course with historical data from the traditional, in-person course from 2012–2018. We did not include data from 2015 because that course was conducted with neonatologists, and they are sufficiently different from adult critical care trainees. Satisfaction outcomes for the 2016 cohort (12 learners) were not collected.

We used summary statistics to report group demographics. We report self-assessed skill as medians with interquartile ranges and Mann-Whitney $U$ test for statistical significance with a $P$ value cutoff of 0.05. Statistical testing was completed using Stata.

## RESULTS

### Participants

A total of 28 first-year fellows participated in the 2020 hybrid virtual course, 7 (25%) Pulmonary/Critical Care and 21 (75%) Critical Care. A total of 101 fellows, 30 (30%) Pulmonary/Critical Care and 70 (70%) Critical Care, participated in the previous in-person courses from 2012–2019. Women and men participants were balanced, with age ranges between 28 and 43 years old (Table 2).

### Communication Skills Outcomes

After the hybrid course, learners' self-reported assessments for specific communication skills after training were overall high. Median Likert scale scores with interquartile ranges for the communication skills are shown in Table 3. Learners reported feeling well prepared or very well prepared (corresponding to 4 or 5 on the Likert scale) over 90% of the time in skills such as delivering bad news, conducting a family meeting, and expressing empathy.

In comparing the hybrid course with the in-person course, most learners' self-reported skills assessments were high in both versions (Figure 2) and were not significantly different (Table 3).

### Satisfaction Outcomes

Learners' satisfaction with the hybrid course components were overall high (mean of 4.8). Course components include interactive didactic sessions, role-play, small-group leaders, and standardized actors. Mean and median Likert scale satisfaction scores for course components are shown in Table 4. Over 90% of participants rated the specific course components as effective or very effective (corresponding to 4 or 5 on the Likert scale). Participants universally rated the overall relevance of the course to their ICU practice at a 4 or 5 on the Likert scale.

In comparing the hybrid course with the in-person course, learners nearly universally rated the overall importance of the skills taught and the educational quality of the course a 4 or 5 on the Likert scale in both versions of the course (Figure 3). Learners rated the online didactic content

**Table 2.** Characteristics of learners

| Characteristics | 2012–2019 (*n = 101*) | 2020 (*n = 28*) |
| --- | --- | --- |
| Women, *n* (%) | 58 (57%) | 13 (46%) |
| Pulmonary/critical care fellowship, *n* (%) | 30 (30%) | 7 (25%) |
| Critical care fellowship, *n* (%) | 70 (70%) | 21 (75%) |
| Age, yr, mean (range) | 32 (28–42) | 33 (29–43) |

significantly higher than the traditional in-person didactic content (mean, 4.5 in person to 4.8 online; *P* = 0.03). There was no statistically significant difference in the learners' satisfaction with any other course components comparing the hybrid course to the traditional in-person course (Table 4). Drills were a new feature of the 2020 hybrid course; therefore, they were not evaluated in prior years.

### Feedback about the Hybrid Model

Nine fellows provided informal feedback about the hybrid course. Representative quotes on the virtual morning sessions

include, "I like the morning online sessions and then practice in-person in the afternoons" and "I would keep the morning sessions virtual. They offer more flexibility."

### DISCUSSION

We found that learners rated a hybrid-virtual and in-person version of communication skills training not significantly different from traditional in-person courses. Learners' satisfaction scores and feedback suggest that the online morning didactic content was particularly valued in the hybrid format because it allowed the

**Table 3.** Self-reported communication skills after skills training

| Communication Skills | 2012–2019 (*n = 101*) | 2020 (*n = 28*) | *P* Value* |
| --- | --- | --- | --- |
| Give serious news | 5 (4–5) | 5 (4–5) | 0.53 |
| Conduct family meeting | 5 (4–5) | 4 (4–5) | 0.74 |
| Express empathy | 5 (4–5) | 5 (4–5) | 0.52 |
| Discuss treatment options | 5 (4–5) | 4 (4–4.75) | 0.87 |
| Discuss stopping treatments | 5 (4–5) | 4 (4–5) | 0.72 |
| Respond to potentially inappropriate treatments | 4 (4–5) | 4 (3.25–4) | 0.92 |
| Discuss code status | 5 (4–5) | 4 (4) | 0.98 |
| Support religion | 4 (4–5) | 4 (4–5) | 0.48 |
| Overall importance of communication skills | 5 (5) | 5 (5) | 0.22 |
| Overall relevance of skills to ICU practice | 5 (5) | 5 (5) | 0.13 |

*Definition of abbreviation*: ICU = intensive care unit.
Data are presented as median (interquartile range).
*Mann–Whitney *U* test.
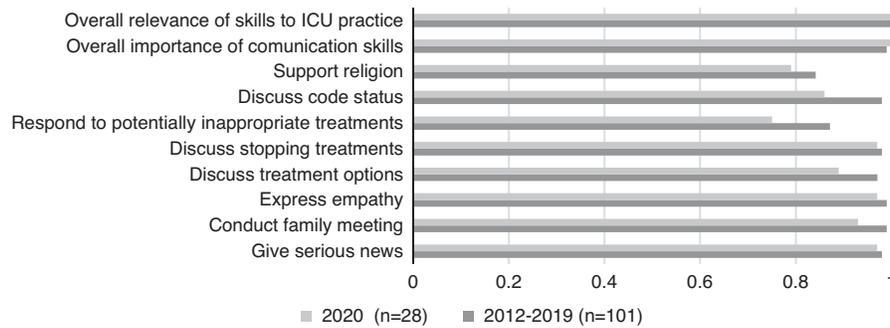
**Figure 2.** Learners' self-rated communication skills as 4 or 5 after the course. ICU = intensive care unit.

fellows more flexibility in schedule and location.

The COVID-19 pandemic has significantly disrupted medical education. This disruption has brought about rapid innovation in how academic medical centers deliver graduate medical education. This study provides a model on how to leverage technology to construct a communication skills training course in the setting of a global pandemic that limits large-group gatherings. Although there is existing literature on how the pandemic has affected medical education with proposed solutions, this literature currently consists largely of perspectives and opinion pieces (10, 16–18). Our study complements a study by Frydman and colleagues that showed a virtual communication skills training course of Geriatrics and Palliative Medicine fellows was feasible and effective in terms of self-reported preparedness for

communication with patients and their families (19). Our study adds to this literature by expanding to learners in pulmonary and critical care medicine and including both virtual didactics and in-person skills training, with data from the learners showing no significant differences in ratings of self-assessed skills or course components.

Virtual components of medical education programs have the potential to persevere beyond the pandemic and become a perennial teaching tool. Our qualitative data suggests that learners may prefer the virtual format for the didactic portions of our course, citing increased flexibility and ability to learn at their own pace. One survey of medicine and surgery residents showed they felt virtual didactics to be more effective (20). When thinking about the effectiveness and sustainability of virtual education, it is critical that

**Table 4.** Learner satisfaction with course components

| Course Components | 2012–2019 (n = 101) | 2020 (n = 28) | P Value* |
|---|---|---|---|
| Didactics (in-person vs. online) | 5 (4–5) | 5 (4.75–5) | 0.13 |
| In-person role-play | 5 (5) | 5 (4.75–5) | 0.28 |
| Effectiveness of small group leaders | 5 (5) | 5 (5) | 0.2 |
| Effectiveness of actors | 5(5) | 5 (5) | 0.0.36 |
| Overall educational quality | 5 (5) | 5 (5) | 0.33 |

Data are presented as median (interquartile range).
*Mann–Whitney *U* test.
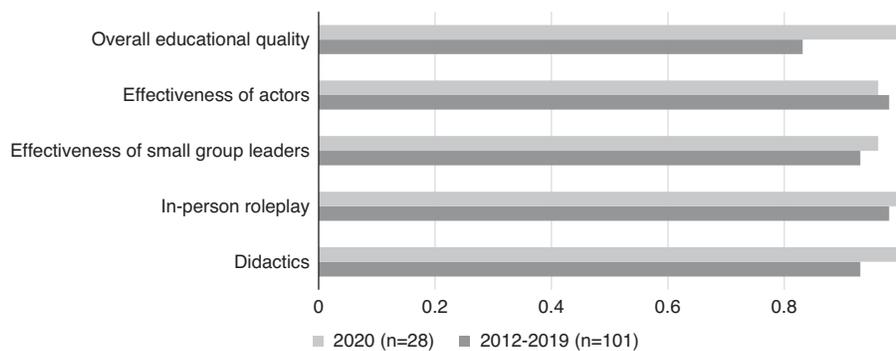
Figure 3. Learners' satisfaction rating of course components as 4 or 5.

educators think deeply about how to incorporate best practices and adult learning theory to keep learners engaged (21, 22). Advantages of interactive modules include that they are not lecturer specific, can incorporate best practices, and be disseminated broadly. Our incorporation of focused practice through drills is one example of how to keep adult learners engaged in a hybrid-virtual format (11).

There are potential weaknesses in virtual teaching platforms for graduate medication education. Skills training in particular is potentially important to deliver within an in-person setting to facilitate deliberate practice and foster community. Other concerns are mainly focused on the benefits of social interactions, which may include development of professionalism, establishment of mentoring relationships, and general well-being (23). Our hybrid program attempts to find a balance between virtual didactics and in-person skills training. Looking forward, medical educators will need to be thoughtful about which components of their educational programs are better delivered virtually and in person.

In our limited statistical analysis, we did not find statistically significant differences in learners' assessments of the traditional in-person course compared with the hybrid version. Our interpretation is that the hybrid version is at least as good as the traditional in-person version of the course, as determined by learner self-assessments. However, these self-reported measures have limitations. They are helpful to assess buy-in and satisfaction of learners to our educational intervention. However, they do not show whether the learners' skills actually improved from the intervention or the impact of those skills on patient outcomes. Future research is needed to assess the impact of communication skills training on learner behaviors and patients' and families' outcomes.

## Limitations

Our study has limitations. Although this program is likely reproducible, this was a single-center curriculum evaluation conducted by faculty with extensive expertise in communication skills training. Using a historical control means that our results may be influenced by differences in learners and in the curriculum over time. For example, the drills are a new component to the 2020 course that may have influenced the learners' assessments. We had missing data in the historical control from the years 2016 and 2019. However, the remainder of our historical control is sufficiently robust and less likely to systematically influence the results.

## Conclusions

In conclusion, we found that learners rated a hybrid version of communication skills training similarly to the traditional in-person version of the course. We have provided a scaffolding on how to implement such a course. Although some of the virtual components of this training will outlive the current pandemic, we encourage educators to be mindful of how to maximize the potential benefits of virtual learning and minimize potential downsides.

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