

Surgical Education

# Learning by (video) example: a randomized study of communication skills training for end-of-life and error disclosure family care conferences



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OSCE;  
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## Abstract

**BACKGROUND:** Teaching residents to lead end of life (EOL) and error disclosure (ED) conferences is important.

**METHODS:** We developed and tested an intervention using videotapes of EOL and error disclosure encounters from previous Objective Structured Clinical Exams. Residents ( $n = 72$ ) from general and orthopedic surgery programs at 2 sites were enrolled. Using a prospective, pre-post, block group design with stratified randomization, we hypothesized the treatment group would outperform the control on EOL and ED cases. We also hypothesized that online course usage would correlate positively with post-test scores.

**RESULTS:** All residents improved (pre-post). At the group level, treatment effects were insignificant, and post-test performance was unrelated to course usage. At the subgroup level for EOL, low performers assigned to treatment scored higher than controls at post-test; and within the treatment group, post graduate year 3 residents outperformed post graduate year 1 residents.

**CONCLUSIONS:** To be effective, online curricula illustrating communication behaviors need face-to-face interaction, individual role play with feedback and discussion.

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Helping family members to cope with unexpected complications and end-of-life decisions for loved ones represent 2 challenging tasks for surgeons in training.<sup>1</sup> Yet these events are common, particularly in intensive care units, where fewer than 5% of the patients are able to communicate their wishes or advocate for themselves,

and where half of all hospital deaths occur.<sup>2</sup> Consequently, training residents to proactively and compassionately address end-of-life issues is a high priority for patients, families, and our aging society as a whole.<sup>3</sup> Preparing residents for the inevitability of medical complications and their disclosure constitutes a protective measure for residents.<sup>4</sup>

Research on interpersonal, communication skills, and professionalism has accelerated since the ACGME named these core competencies in 1999. In 2005, a review of training methods for “bad news” communications concluded that longer programs combining didactics and theoretical knowledge with practical rehearsal, learning in small, groups, and constructive feedback from peers and skills facilitators represented the most effective approach.<sup>5</sup> Several rigorous studies using multimodal interventions have reported success in enhancing communication skills beyond an immediate post-test.<sup>6–8</sup> But all require significant intensity in terms of time and dosage. Most residency training programs, for example, do not have the expertise, resources, or time to hold multiday retreats, or to deliver a 40-hour, interactive communication skills curriculum. In this study, we tested an online course with multiple, brief video examples to be used by residents over the course of the year for independent learning. We paired this online resource with 2-, 1-hour, face-to-face (F2F) teaching sessions.

This intervention grew out of the extensive experience at the University of Minnesota Department of General Surgery with the “Family Conference Objective Structured Clinical Exam” (OSCE).<sup>9</sup> During this examination, residents participate in videotaped role play encounters involving end of life (EOL) and medical error disclosure (ED) and are evaluated by standardized family members, critical care nurses, and surgeons. In 2011, we (J.G.C., S.H., and C.C.S.) published the results of a multi-institutional study in which the OSCE was replicated across 6 general surgery departments with categorical post graduate year 1 (PGY1) and PGY3 residents.<sup>10,11</sup> We learned that our OSCE produced reliable data, but that resident performance was unrelated to their training year. Some PGY1 residents were already good at “bad news” communication, whereas some PGY3 residents were clearly not. We concluded that routine exposure to families and faculty role models during the PGY1-PGY3 years were insufficient training mechanisms, and especially for residents who were not naturally gifted in interpersonal skills, or had not been previously exposed to communication skills training. Although the OSCE experience alone imparts some learning, we felt that all residents needed clearer examples of what effective “bad news” communications look and sound like.

In 2013, we (C.C.S., and J.G.C.) formed a partnership with the orthopedic program director at the University of Minnesota (J.P.B.), and the orthopedic and general surgery program directors at the Mayo Clinic in Rochester (N.T., S.H.), to design and test an intervention that capitalized on our 7 years’ worth of videotaped examples of effective and

ineffective OSCE encounters. We felt it was critically important that this intervention be low cost, feasible, replicable, time sensitive, and sustainable.

In this prospective, randomized study, we tested the hypothesis that at post-test, the treatment group would outperform the control group on EOL and ED case encounters. We were especially interested to learn whether residents who performed poorly on the pretest and were randomized to the intervention improved to a greater extent than the low performers who were randomized to the control group. In a secondary analysis, we investigated the extent to which post-test performance was related to residents’ degree of engagement with the intervention (ie, use of the online course videos and materials.) We posited that a greater “dosage” of the online course would be positively associated with EOL and ED change scores.

## Methods

In the fall of 2014, all categorical PGY1 and PGY3 residents ( $n = 72$ ) in general and orthopedic surgery programs at the University of Minnesota (UMN) and Mayo Graduate School (Mayo) were enrolled in the study. This included 28 UMN residents ( $n = 12$  general surgery,  $n = 16$  orthopedic) and 44 Mayo residents ( $n = 20$  general surgery,  $n = 24$  orthopedic). All 4 program directors required these residents to take the Family Conference OSCE as part of their annual ACGME Milestone evaluations. They also designated the online course and F2F teaching sessions as a required curriculum in professionalism, interpersonal skills, and communication for the intervention group in 2014-15, and for the control group in 2015-16. During 2014-15, there were no other formal curricula at either institution or program addressing these competencies. Whatever communication competencies the residents attained during this time period were learned via “on the job” experience, informal mentoring, or other self-initiated activities. Institution Review Boards at both institutions considered the study exempt from full review.

## The intervention

Our online course, “Mastering Difficult Family Conversations in Surgical Care,” was professionally created with an instructional designer (Y.Y.). It contained 10 modules (5 EOL, 5 ED). Each module had a power-point presentation with voiceover narration and embedded video clips illustrating more and less effective communication behaviors. Presentations were formatted in video mode and ran about 10 minutes in length. In addition, modules contained transcripts of the video presentation narration ( $n = 10$ ), journal articles ( $n = 30$ ), “cue cards” (ie, lists of suggested phrases to use, or to avoid;  $n = 12$ ), and assorted handouts ( $n = 4$ ). With the exception of journal articles and some handouts, all content was created and narrated by the authors (C.C.S., J.C., J.B., N.T., and S.T.).

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