Assessing quality of clinicians' conversations with patients and families during the Serious Illness Care Program Quality Improvement initiative

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Abstract

Background

Seriously ill hospitalized patients have indicated that better communication with practitioners is vital for improving care. The aim of this study was to assess whether the quality of serious illness conversations improved after implementation of the Serious Illness Care Program (SICP).

Methods

This retrospective chart review evaluated patients who were admitted to a medical ward at Hamilton General Hospital for at least 48 hours and were at risk of prolonged hospital admission or increased need for community-based services (interRAI Emergency Department Screener score 5 or 6; possible score 1 to 6). We used a validated codebook to assess the quality of documented serious illness conversations for eligible patients before and after SICP implementation, specifically examining the following domains: patients' values and goals, prognosis and illness understanding, end-of-life care planning, and code status.

Results

The study sample included 56 control patients from a time period before SICP implementation and 56 patients from the SICP implementation period. The overall quality of documented serious illness conversations of intervention patients was significantly higher ($p<0.001$) compared to those in the control group and was significantly higher in the sub-domains of values and goals ($p<0.001$), prognosis and illness understanding ($p<0.001$), and life-sustaining treatments ($p=0.04$), but not end-of-life care planning ($p=0.36$).

Interpretation

Implementation of the SICP in a hospital setting was associated with a higher quality of documented serious illness conversations with patients at high risk of clinical or functional deterioration.

Introduction

Current communication practices often do not meet the needs of seriously ill hospitalized patients. For example, there is a lack of honest discussion surrounding prognosis with patients who have serious illness, especially those with non-cancer diagnoses [1, 2]. However, patients have identified that having these discussions is necessary to prepare for what lies ahead and a shared understanding of illness trajectory is important to support high quality care [2]. In addition to prognosis, seriously ill hospitalized patients have expressed that an exploration of values, fears and preferences is important to them; however, these elements are infrequently discussed by clinicians in the hospital setting [2, 3]. As a result of these gaps in communication, patients often receive invasive treatments that are discordant with their values and goals [3-5]. Inadequate communication during serious illness between practitioners, patients, or their families has a negative impact on satisfaction with care and can also create distress for surrogate decision makers in making proxy decisions about treatment [6]. Evidence suggests that improved communication earlier in the illness trajectory with patients and future surrogate decision makers about the patient's values, goals and priorities can substantially ameliorate some of this emotional burden [6].

In this paper, we define a serious illness conversation as any conversation between a practitioner and a patient with serious life-limiting illness, or their surrogate decision maker(s), about illness understanding, prognosis, values, fears, and sources of strength, with the intent to inform current or future decisions about treatment. We recently adapted and implemented the Serious Illness Care Program (SICP) on the medical wards of our hospital to build capacity to have more frequent and higher quality serious illness conversations [7, 8]. The rationale for this program is that scalable solutions are needed to equip non-palliative care clinicians with communication skills that can enable them to initiate a palliative approach to care earlier in the trajectory of serious, life-limiting illness without necessarily needing to formally involve palliative care practitioners. The SICP was originally designed for outpatient oncology practice and has been successfully implemented in primary care [9]**.** However, we judged that it addressed a number of well-documented gaps in communication with hospitalized patients who have serious illness [3, 4]. Therefore, we conducted a quality improvement initiative to adapt the SICP for an inpatient setting and to implement the program on the medical wards of our hospital. In this study, we used a validated, structured codebook to compare the quality of documented serious illness conversations for hospitalized patients at high risk of clinical or functional deterioration who were enrolled in the SICP compared to a similar group of historical control patients who were not enrolled.

Methods

Design

We conducted a retrospective chart audit to assess the quality of serious illness conversations during implementation of the SICP quality improvement initiative compared to usual care (see Control Group below).

Setting

The quality improvement initiative was conducted on the general internal medicine wards at Hamilton General Hospital (HGH), a teaching hospital affiliated with McMaster University, Hamilton, Ontario, Canada. Ethics approval was obtained for coding of SICP conversations by the Hamilton Integrated Research Ethics Board. Implementation of the SICP itself did not require ethics approval, as it is a quality improvement initiative.

Intervention

The SICP is a health system intervention aimed at building capacity for clinicians to have more frequent, earlier, and more person-centered conversations with patients who have serious illness [7,8,10]. The SICP includes tools for clinicians, an educational component and a system change component. Please refer to Online Appendix 1 for a detailed description of the SICP and how it was adapted to the inpatient medical setting.

Intervention Group

Patients were eligible to be enrolled in the SICP if they were i) admitted to a medical ward at HGH for at least 48 hours and ii) received an interRAI Emergency Department Screener score of 5 or 6 (possible scores ranged from 1 to 6) when assessed by a trained nurse at the time of hospital admission. During the implementation of the SICP, between March 1, 2017 and January 19, 2018, we screened 391 patients for eligibility, identified 275 eligible patients, and delivered serious illness conversations to a convenience sample of 56 eligible patients using the Guide. Conversations could not be delivered to all eligible patients because of practical limitations on the maximum number of serious illness conversations a given clinician could hold during a typical work week and because some patients were discharged from hospital before a conversation could be arranged.

Control group

Before implementation of the SICP quality improvement initiative on March 1, 2017, we had prospectively conducted 2 cross-sectional sampling exercises. These collected data on basic demographic characteristics (age, sex), comorbidities (using the Charlson Comorbidity Index [14]), and scores on the InterRAI Emergency Department Screening Tool at time of admission for all medical inpatients at HGH on a single day in December 2016 and on a single day in February 2017, respectively. To enable comparison of the quality of serious illness conversations during implementation of the SICP and usual care, we created a control group (i.e., unexposed to the SICP) consisting of any patients from these 2 cross-sectional samples who had a length of stay of at least 48 hours and had an admission score of 5 or 6 on the InterRAI Emergency Department Screening Tool.

Evaluating quality of conversations

Assessors (C.M., L.R., J.Y.) independently abstracted data from the medical records of the intervention and control patient groups using a structured data collection form and validated codebook from Lakin et al. (2017) that was developed to rate the quality of serious illness conversations. At the beginning of the study, all assessors participated in a calibration exercise to enhance interrater reliability of chart abstraction. Each assessor independently abstracted data from 6 randomly selected charts (3 from intervention group and 3 from control group) and compared their results to reach consensus on scores for these 6 subjects and to ensure consistency.

After the calibration exercise, assessors (C.M and L.R.) each independently evaluated one half of the control and intervention group charts. To maintain consistency, every 10th chart was coded in duplicate by the second reviewer and the results of the two reviewers were compared at regular intervals.

When assessing the quality of documented serious illness conversations, dictated and written progress notes from patient charts were eligible to be coded. There was a significant amount of heterogeneity in how serious illness conversations were documented in control charts. In order to capture all potential serious illness conversations in the control group, we used a low threshold to include notes as serious illness conversations. Therefore, conversations were considered “Serious Illness Conversations” if they scored one point or greater using the codebook. Furthermore, many control charts had multiple documented conversations that scored one point or greater. In these cases, we used the conversation that scored the greatest amount of points in the analysis. Control charts without documented serious illness conversation were excluded from the analysis.

The following domains were used to evaluate the quality of goals of care conversations: patient values and goals (assessed on a scale of 0-7), prognosis/illness understanding (assessed on a scale of 0-4), end of life care planning (assessed on a scale of 0-4), code status or desire for other life sustaining procedures (assessed on a scale of 0-2). The total possible score is 0-17. See Online Appendix 1 for a more detailed document on scoring for codebook domains.

Statistical analysis

We used descriptive statistics to summarize the distributions of age, sex, and Charlson Comorbidity Index for intervention and control patients and compared those distributions using an unpaired t-test for continuous variables (age, Charlson Comorbidity Index) and a chi squared test for categorical variables (sex). The significance level was set at $p \leq 0.05$. We hypothesized that the quality of serious illness conversations would be higher in the intervention patients than in the control patients. We used unpaired t-tests to compare the difference in codebook scores of the intervention and control groups.

Results

Serious Illness Conversations

Table 1 displays the characteristics of the intervention and control subjects. There were no significant differences in their age or sex distribution. Of the 56 patients in the intervention group, 55 (98%) had a serious illness conversation documented in the medical record, and 39 (70%) of these conversations were documented as dictated, transcribed notes in the electronic medical record, with the remaining 16 (30%) documented as written progress notes in the paper chart. Of the 56 patients in the control group, 28 (50%) had a serious illness conversation documented in the medical record and, of these, 5 (18%) were dictated and transcribed in the electronic medical record, with the remaining 23 (82%) being documented as written progress notes. Serious illness conversations were more likely to be led by attending physicians (as compared to residents or nurse practitioners) in the intervention group than the control group (Table 1; $p<0.001$).

Quality of Serious Illness Conversations

Table 2 presents the mean scores for the overall quality of serious illness conversations based on structured chart review using the validated codebook. This analysis only includes the patients in each group who had a documented serious illness conversation (intervention=55, control=28). Overall scores were significantly higher ($p<0.05$) in the intervention group compared to the control group (*Table 2, Figure 1*). Domain scores were also significantly higher in the intervention group compared to the control group except for the end-of-life care planning domain. Furthermore, mean scores were significantly higher in the intervention group than in the control group for nearly all codebook items within each domain (Online appendix 2).

We also conducted a sensitivity analysis to compare the quality of documented serious illness conversations in the intervention and control groups, stratified by conversations that were led by attending physicians versus conversations that were led by other clinicians (residents or nurse practitioners). Within both strata, we found that the quality of conversations was higher in the intervention group than in the control group (*Table 3*).

Interpretation

Health care practitioners need to have higher quality serious illness conversations with hospitalized patients [3, 15-19]. Currently, serious illness conversations that take place between inpatients and their health care practitioners do not meet patient needs, nor do they prepare them for what lies ahead, resulting in the use of invasive treatments that do not align with patients' values and goals [2-5]. In this single center, retrospective chart review study, we found that the quality of documented serious illness conversations after implementation of the SICP, assessed using a validated codebook, was significantly higher across multiple domains compared to usual care. In particular, conversations after SICP implementation more often discussed patients' values and goals, prognosis and illness understanding compared to usual care. To our knowledge, this study is the first to assess whether the SICP improves the quality of serious illness conversations after implementation in the inpatient medical setting. Our study expands on the existing body of work that has studied the use of the SICP in other clinical settings. For example, Lakin et al. conducted a similar analysis after implementation of the SICP in the primary care setting which demonstrated an increased number of serious illness conversations and improved accessibility and comprehensiveness of serious illness conversations [20]. Our findings are consistent with those of Lakin et al. and suggest that the SICP is a flexible model that can be adapted successfully to both the inpatient and outpatient settings as well as oncology and non-oncology populations.

We also found that serious illness conversations were more clearly documented and more retrievable after SICP implementation. 70% of the serious illness conversations in the intervention group were documented as well-labeled, dictated notes in patients' electronic medical records specific only to the serious illness conversation. In comparison, only 18% of the conversations in the control group were dictated and transcribed in the electronic medical record, and all of these transcribed notes contained additional information that was not directly pertinent to the serious illness conversation. The remaining 82% of the serious illness conversations in the control group were documented as hand-written progress notes. A recent multicentre study demonstrated that patients on internal medicine wards are at risk of inappropriate end-of-life care which is in part related to poor communication and poor documentation of serious illness conversations [20]. The potential implications of improved accessibility and clarity of documentation as a result of SICP implementation are an increased likelihood that the content of these conversations can impact future care and reduced medical error related to interventions discordant with patient preferences.

There was no significant difference between control and intervention conversations in the end-of-life planning domain, and the findings for the life-sustaining treatments domain were not as robust compared to the prognosis/illness understanding and values/goals domains. This is consistent with what was found in SICP implementation in oncology patients (with more robust improvements in the prognosis/illness understanding and values/goals domains) [21]. We hypothesize that serious illness conversations are more values-oriented when clinicians follow the Serious Illness Conversation Guide. An important focus of the clinician training component of the SICP is to re-orient clinicians to focus on eliciting values and goals during serious illness conversations, and to communicate prognostication with patients and their families, rather than procedure-focused conversations that are typical of current practice.

Our study also has limitations. First, due to the nature of the intervention, researchers could not be blinded during data extraction. Coding of written and dictated notes summarizing serious illness conversations required subjective interpretation. However, in addition to using a structured evaluation tool, the study authors completed a calibration exercise and conducted regular internal audits of chart abstraction to minimize the subjectivity and maximize consistency in this process. Second, we did not deliver serious illness conversations to all eligible patients we identified during the intervention period. To the extent that missed patients were systematically different in ways that would have affected the quality of serious illness conversations, this introduces a risk of bias into our findings. Finally, our study findings are based on the implementation of SICP at a single academic teaching hospital. As a result, our results may not be transferable to other health care settings or to other jurisdictions.

In conclusion, in this single-centre retrospective chart review study, we found that the SICP, when implemented in a hospital setting, is associated with a higher quality of documented serious illness conversations compared to usual care. Our findings suggest that a structured approach to triggering, conducting and documenting serious illness conversations can enhance both the quality of the conversation itself as well as the retrievability of the documentation. Future work should continue to focus on identifying best practices to implement these structured approaches in clinical practice and to increase their uptake by clinicians.

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Table 1. Baseline characteristics of intervention and control patients and serious illness conversations

Variable	Intervention (n=56)	Control (n=56)	P value
Age at time of conversation, years, mean (SD)	76.2 (11.8)	80.1 (11.4)	0.08
Male, n (%)	26 (46)	25 (45)	0.84
Charlson comorbidity index, mean (SD)	0.9 (1.5)	1.1 (1.3)	0.89
Serious illness conversation documented in chart, n (%)	55 (98)	28 (50)	<0.001
Type of clinician who led conversation			
Attending physician, n (%)*	48 (87)	12 (43)	<0.001
Resident, n (%)*	3 (5)	8 (29)	
Nurse practitioner, n (%)*	4 (7)	8 (29)	
Family/proxy present, n (%)*	48 (87)	24 (86)	0.84

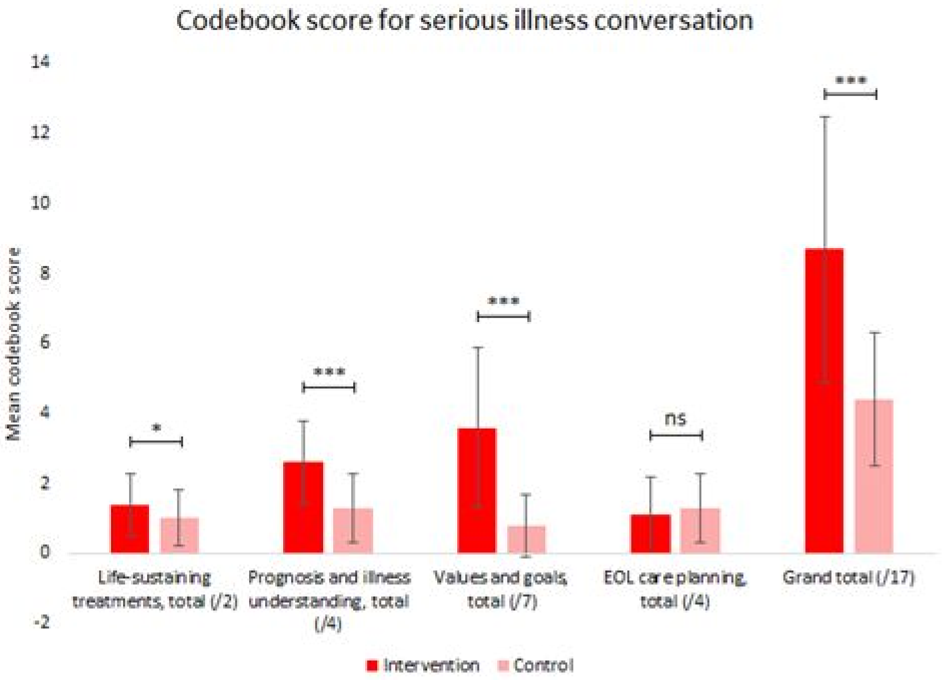
*Denominator is the number of patients with a documented serious illness conversation in the chart

Table 2. Quality of serious illness conversations based on chart review using a validated codebook

Domain	Intervention (n=55)	Control (n=28)	P-value
Life-sustaining treatments, total (/2)	1.4 (0.9)	1.0 (0.8)	0.04
Prognosis and illness understanding, total (/4)	2.6 (1.2)	1.3 (1.0)	<0.001
Values and goals, total (/7)	3.6 (2.3)	0.8 (0.9)	<0.001
EOL care planning, total (/4)	1.1 (1.1)	1.3 (1.0)	0.36
Overall (/17)	8.7 (3.8)	4.4 (1.9)	<0.001

All values reported as mean (SD)

Figure 1. Quality of serious illness conversations



* = p≤0.05
** = p≤0.01
*** = p≤0.001

Table 3. Quality of conversations between intervention and control conversations, stratified by the type of clinician leading the conversation

Type of clinician who led conversation	Mean total codebook score (/17)		P-value
	Intervention (n=55)	Control (n=28)	
Physician	8.9 (3.9)	4.6 (1.9)	<0.001
Resident or nurse practitioner	7.7 (2.6)	4.3 (2.0)	0.002

All values reported as mean (SD)

Online Appendix 1. SICP and its adaptation to the inpatient setting

Tools include a Pre-Visit Letter for patients, the Serious Illness Conversation Guide and Clinician Reference Guide for clinicians, and a Family Communication Guide for patients and their families. The primary educational component consists of a 2.5 hour clinician training workshop. Components of the workshop include reflection, didactic teaching, skills practice using the Serious Illness Conversation Guide with standardized patients, and direct observation and feedback from faculty who have expertise in serious illness communication. System change refers to the design and implementation of the following processes to enable these conversations in practice: identifying suitable patients, triggering clinicians to have serious illness conversations with eligible patients, delivering the conversation using the Guide, and documenting the conversations in the medical record.

Although the clinician training component of the SICP did not require modifications, we made some adjustments to the original program to tailor processes for a hospital-based setting more generally, and for our local context more specifically. First, we leveraged an existing initiative at our hospital to systematically screen all patients age 65 years and older at the time of admission using a tool called the interRAI Emergency Department Screener [11]. This tool is a brief, validated, proprietary instrument with higher scores predicting an increased risk of prolonged hospitalization or need for community-based services. The instrument includes items in the domains of the patient's physical function, mood, comprehension, presence of dyspnea, and family/caregiver burnout at initial emergency assessment [11-13].

Second, to trigger clinicians (attending internists or nurse practitioners who participated in a 2.5 hour SICP clinician training workshop) to have a Serious Illness Conversation with eligible patients, we hired a Unit Champion to support our quality improvement initiative who was a former bedside nurse from one of our medical wards. The Unit Champion spoke with the attending internist or nurse practitioner most involved in the care of a given eligible patient to alert them that their patient would likely benefit from a Serious Illness Conversation. If vetted by the attending internist or nurse practitioner, the Unit Champion proceeded to prepare the patient and schedule a formal meeting. Third, to prepare eligible patients for the conversation, instead of mailing a Pre-Visit Letter, the Unit Champion met in person with patients or their family members (sometimes by telephone) to review content in the Pre-Visit Letter that was adapted for an inpatient context. Again, because we were working in a hospital setting, instead of a pre-booked clinic appointment, Serious Illness Conversations were scheduled to take place in a private meeting room on the ward (i.e., not at the patient's bedside). These conversations involved the patient and/or family member(s), the attending internist or nurse practitioner, and other interprofessional team members (e.g., social worker, physiotherapist, occupational therapist, etc) as judged relevant by the Unit Champion. Finally, conversations were documented by the attending internist, resident physician, or nurse practitioner as a structured, dictated clinical note with a separate heading corresponding to each item in the Serious Illness Conversation Guide. The note was subsequently transcribed, placed in the patient's electronic health record, and automatically faxed to the patient's primary care physician on record.

Online Appendix 2

The following was adapted from Paladino, Bernacki et al. [21]

GOALS AND VALUES *7 total items* *For scoring purposes – Goals of care can be EITHER specific OR non-specific*	
Goals of care (unspecified)	Documentation of a discussion about “goals” or “goals of care”, without mention of specific goals or priorities. Examples: “We also discussed goals of care”; “30 minutes were spent discussing goals of care” If any one or more of the following subdomains were addressed, a point was also given in this domain.
Goals, priorities, “is important to” (specific)	Documentation of a discussion about particular goals important to the patient, excluding “treatment decisions” (e.g. decisions about chemotherapy regimens). Examples: “The patient wants to be at home/live as long as possible/not be a burden”; “His priority is to be able to teach his courses this fall” ; “It is important to her to be able to enjoy their trip to Hawaii in the spring”
Fears, worries	Documentation of a patient’s fears, worries or concerns Example: “He worries about becoming dependent and ‘dying without dignity’”
Tradeoffs	Documentation of what a patient is willing to go through (e.g. for the possibility of more time) Example: “He does not want to experience any major side effects unless there is a high likelihood of therapeutic benefit”
Function, abilities	Documentation of abilities that are critical to the patient Example: “Maintaining his ability to interact with others is important to him”
Quality of life	Explicit documentation of a discussion about the patient’s quality of life or how the patient subjectively defines quality of life. Example: “We had a long discussion re: quality of life today” References to symptom control on the ward do not qualify as a point for QOL. Example: “Patient given hydromorphone for pain”

Family involvement/Support for Family	Documentation of how much family knows about the patient's priorities/wishes; how much the patient wants family to be involved in further decisions; planning for family to be present at subsequent discussions; the role of the family in the patient's care or how the family is affected by the patient's illness. Examples: "We talked about how he and his wife might begin to have conversations with their daughters." ; "We talked about how her son has been helping her manage at home." "We talked about how she feels she is a burden on her son and how he needs more support as a caregiver." A mention that family was present for the conversation do not count as a point. Example: "Patient's sister present for meeting"
PROGNOSIS OR PROGNOSTIC UNDERSTANDING *4 total items* *For scoring purposes – Prognosis is EITHER specific OR non-specific*	
Information preferences	Documentation of the patient's preferences to receive information about prognosis or the future. Example: "Patient stated she would like to receive prognostic information frequently and in the presence of family"
Prognostic understanding	Documentation of the patient's understanding of illness or prognosis Example: "We talked about his cancer today, and he understands that his tumor is incurable"; "He knows he only has weeks to live"
Prognosis/life expectancy (unspecified)	Documentation of a discussion about prognosis or life expectancy, without specific communication of time, function, or QOL. Example: "We discussed his prognosis today"; "30 minutes were spent today answering their questions about prognosis and treatment options" If the following subdomain was addressed, a point was also given in this domain.

Prognostic communication about time, function, or QOL; no more treatment options, progression of disease, worsening of disease, functional decline (specific)	Documentation of specific mentions of prognosis (in terms of time, function, or QOL) or discussion of no more treatment options, progression of disease, worsening of disease, functional decline Example: “They had questions about prognosis. I shared that he likely has weeks to months left.” ; “We discussed this is likely the best the patient will feel and the disease will cause worsening decline”
END-OF-LIFE CARE PLANNING *4 total items*	
End of life, end of life planning, EOL, advance care planning (unspecified)	Documentation of any of these keywords in the context of a broader discussion. Example: “Today we discussed the patient’s end-of-life preferences.” If any one or more of the following subdomains were addressed, a point was also given in this domain.
Palliative care, supportive care, comfort-focused care	Documentation of discussion about future use of, initiating or transitioning to palliative care, supportive care, or comfort-focused care (not including palliative chemotherapy). Example: “She and her family indicated that given the circumstances, they would like to start a comfort-oriented approach.” Report of use of palliative approach to care alone did not count without documentation of a discussion. Example: “Palliative care service following for symptoms management”
Hospice	Documentation of any of these keywords in a discussion. Example: “After a lengthy discussion, we have opted to discontinue therapy and proceed with referral to hospice.”
Site of death/Practical planning	Documentation of a discussion indicating where the patient wants to be at death (e.g. at home, or at hospice) or about estate planning or legal documents. Example: “Patient wishes to die at home”
CODE STATUS OR LIFE-SUSTAINING TREATMENTS *2 total items*	

Code status (DNR/DNI/Full code)	Documentation of discussion with keywords “Code Status” “Full Code”, “CPR” or “DNR”. Example: “Today we discussed code status” “Patient states she wishes to switch to Full Code given these circumstances” Reports of code status alone do not count without documentation that a discussion occurred. Example: “Code Status: DNR”
Life-sustaining treatments (Also: chest compressions/ intubation/shocks/ feeding tube/ICU)	Discussion specifying life sustaining treatments that are within patients desired scope of care. Examples: “We talked about whether the patient would want CPR if her heart stopped beating”

Online Appendix 3. Quality of Serious Illness Conversations: mean scores on individual codebook items

Domain		**Intervention (n=55)**	**Control (n=28)**	**P-value**
Life-sustaining treatments	Code status (/1)	0.8 (0.4)	0.7 (0.5)	0.63
	Life-sustaining treatments, etc (/1)	0.7 (0.5)	0.3 (0.5)	0.002
Prognosis and illness understanding	Illness understanding (/1)	0.8 (0.4)	0.3 (0.5)	<0.001
	Information preferences (/1)	0.3 (0.5)	0 (0)	<0.001
	Prognosis, unspecified (/1)	0.9 (0.4)	0.7 (0.5)	0.06
	Prognosis communication about time, etc (/1)	0.6 (0.5)	0.3 (0.5)	0.002
Values and goals	Goals of care, unspecified (/1)	0.8 (0.4)	0.1 (0.3)	0.002
	Goals, priorities, “is important to” (/1)	0.7 (0.5)	0.1 (0.3)	<0.001
	Fears, worries (/1)	0.6 (0.5)	0 (0)	<0.001
	Tradeoffs (/1)	0.3 (0.5)	0.1 (0.3)	0.009
	Function, abilities (/1)	0.4 (0.5)	0 (0)	<0.001

	QOL (/1)	0.5 (0.5)	0.1 (0.3)	<0.001
	Family involvement, etc (/1)	0.3 (0.5)	0.1 (0.3)	0.01
EOL care planning	EOL, unspecified (/1)	0.5 (0.5)	0.6 (0.5)	0.19
	Palliative care, etc (/1)	0.4 (0.5)	0.6 (0.5)	0.03
	Hospice (/1)	0 (0.29)	0 (0)	0.31
	Site of death discussion, etc (/1)	0.1 (0.3)	0 (0)	0.05

All values reported as mean (SD)