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An emergency department nurse led intervention to facilitate serious illness conversations among seriously ill older adults: A feasibility study

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Abstract

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Authorship

All authors met the ICMJE authorship guidelines to contribute to this work.

Declaration of conflicting interests

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

Ethics

Our institutional review board approved this study on December 4, 2020 (protocol # 2020P002934).

Supplemental material

Supplemental material for this article is available online.

Background: Serious illness conversations may lead to care consistent with patients' goals near the end of life. The emergency department could serve as an important time and location for these conversations.

Aim: To determine the feasibility of an emergency department-based, brief motivational interview to stimulate serious illness conversations among seriously ill older adults by trained nurses.

Design: A pre-/post-intervention study

Settings/participants: In an urban, tertiary care, academic medical center and a community hospital from January 2021 to January 2022, we prospectively enrolled adults ⩾50 years of age with serious illness and an expected prognosis <1 year. We measured feasibility outcomes using the standardized framework for feasibility studies. In addition, we also collected the validated 4-item Advance Care Planning Engagement Survey (a 5-point Likert scale) at baseline and 4-week follow-up and reviewing the electronic medical record for documentation related to newly completed serious illness conversations.

Results: Among 116 eligible patients who were willing and able to participate, 76 enrolled (65% recruitment rate), and 68 completed the follow-up (91% retention rate). Mean patient age was 64.4 years (SD 8.4), 49% were female, and 58% had metastatic cancer. In all, 16 nurses conducted the intervention, and all participants completed the intervention with a median duration of 27 min. Self-reported Advance Care Planning Engagement increased from 2.78 pre to 3.31 post intervention (readiness to "talk to doctors about end-of-life wishes," $p < 0.008$). Documentation of health care proxy forms increased (62–70%) as did Medical Order for Life Sustaining Treatment (1–11%) during the 6 months after the emergency department visit.

Conclusion: A novel, emergency department-based, nurse-led brief motivational interview to stimulate serious illness conversations is feasible and may improve advance care planning engagement and documentation in seriously ill older adults.

Keywords

Emergency department; motivational interviewing; advance care planning; behavior therapy

Introduction

Serious illness conversations are defined as conversations between patients and their clinicians that focus on seriously ill patients' values, goals, and priorities related to their health care.[1] As part of a comprehensive care plan, serious illness conversations can lead to well-informed shared decision making and improved quality of life at the end of life.[2] For seriously ill older adults (expected prognosis of <1 year),[3] serious illness conversations may be associated with lower rates of in-hospital death, less aggressive medical care at the end of life, earlier hospice referrals, increased peacefulness, and a 56% greater likelihood to have end-of-life wishes known and followed.[2,4-10] Furthermore, patients with documented serious illness conversations may experience a 36% reduction in the cost of end-of-life care, with an average cost savings of $1,041 per patient in the last week of life.[11] Experts recognize that earlier serious illness conversations are the key to "bend the cost curve" for health care.[12]

Yet only 37% of seriously ill older adults have these conversations with their physicians,[2] on average 33 days before death.[13]

Emergency departments may serve as an ideal setting to engage seriously ill, yet clinically stable, older adults who may benefit from serious illness conversations. During the last 6 months of life, 75% of older adults visit the emergency department.[14] Emergency department visits are inflection points in these patients' illness trajectories, signaling a more rapid rate of decline.[15-17] Furthermore, seriously ill older adults have a high mortality following these emergency department visits (e.g., 39% 1-year mortality for adults over 75 years of age with congestive heart failure).[18-20] More than 70% of these patients express priorities focused on comfort and quality of life rather than life extension,[21] yet a systematic review revealed that 56–99% do not possess advance directives in the emergency department,[22] and many are at risk of receiving care that does not align with their goals.[23] To leverage this opportune moment, we developed and tested a behavioral intervention to engage seriously ill older adults in serious illness conversations in the emergency department (*ED GOAL*) to overcome the known barriers to serious illness conversations in this setting (e.g., time constraints, limited privacy, uncertainty in patients' awareness of their illness).[24] Guided by the Social Cognitive Theory[25] and modeled from previously successful emergency department behavioral interventions[26-31] using the Transtheoretical Model,[32] *ED GOAL* consists of a short, motivational interview that aims to prime patients to discuss their goals of care with their outpatient clinicians rather than triggering a more time-consuming, sensitive conversation in the time-pressured emergency department environment with clinicians with whom they are unfamiliar. In a study of 51 seriously ill older adults who underwent *ED GOAL* by emergency physicians and physician assistants who delivered it with high intervention fidelity,[33] participants found it acceptable and motivated them to talk to their outpatient clinicians about their goals of care.[34]

However, emergency physicians were often interrupted; thus, limiting their implementation.[35] Emergency department nurses suggested that a specially trained, nurse consultation model (e.g., similar to Sexual Assault Nurse Examiners, a national model for specially trained nurses) would result in improved efficacy and enable its use in more emergency departments because motivational interviewing is within their scope of practice.[36-38] Also, such models have been shown to result in a higher quality of care than any other clinician in the emergency department for specific types of care.[39-41] Therefore, we developed and tested the feasibility of *ED GOAL* delivered by trained nurses. We asked "is it feasible to recruit seriously ill older adults in the emergency department, administer *ED GOAL* by trained nurses, and measure patient-centered outcome?" Our objective was to test the feasibility of a nurse-led, *ED GOAL* for seriously ill older adults in the emergency department settings.

Methods

Study design

The study was designed to test the feasibility of our nurse-led *ED GOAL* intervention for seriously ill older adults in the emergency department. We conducted a one-arm, pre/post intervention study in the emergency department at one academic medical center and one

community hospital located in Boston, Massachusetts. The study protocol was approved by our institutional review board. Registration information is available at clinicaltrials.gov (NCT04730986). Given this study was considered minimal risk, our institutional review board recommended that we obtain verbal rather than written consent. All participants provided verbal informed consent.

Study population

Participants were English-speaking adults 50 years and older with serious, life-limiting illness (metastatic cancer, oxygen-dependent chronic obstructive lung disease, chronic kidney disease on dialysis, New York Heart Association class III or IV heart failure, and/or the treating emergency department clinician "would not be surprised if the patient died in the next 12 months"). Patients with non-metastatic cancer, chronic obstructive lung disease not on home oxygen, chronic kidney disease not on dialysis, or New York Heart Association class I or II heart failure were also included if they were hospitalized in the last 12 months for their serious illness.

Patients with clearly documented goals for medical care, including a serious illness conversation in the last 6 months or a medical order for life-sustaining treatment in the electronic medical record, were excluded. We also excluded patients who were determined by the treating emergency department or outpatient clinician to be inappropriate, had delirium or cognitive impairment, or were unable to schedule the enrollment due to logistical challenges.

Procedures

To determine the capacity to provide informed consent, the study nurse administered a 3-min Diagnostic assessment Confusion Assessment Method (3D-CAM)[42] to assess for delirium if the participants were approached in the emergency department. Patients were enrolled only if they were determined to not have delirium with 3D-CAM or were recruited after leaving the emergency department (i.e., considered to be delirium free). Once eligibility was determined, the study nurse obtained informed consent and administered Mini-Cog©[43] to assess for cognitive impairment. If patients were able to consent but were determined to have cognitive impairment, they were considered ineligible and excluded. Only participants who passed both screening instruments received the intervention. After verbal consent was obtained, research assistants administered the validated Advance Care Planning Engagement Survey as the baseline assessment (see Outcomes section). The study nurse then conducted *ED GOAL*. Using standardized methods, two research assistants who were trained to complete chart abstraction using a codebook and collected new serious illness conversation documentation within 6 months of the intervention in the medical records (see supplement for code book used).[44] To assess interrater reliability, 15% of the subjects (12/76) were assessed by both reviewers, and there was 95% agreement. Discrepancies were resolved by consensus. Follow-up assessments with participants were conducted over the telephone 4 weeks (±1 week) after enrollment. Research assistants conducted the follow-up quantitative surveys and asked four open-ended questions about participants' decisions to speak with their family and primary clinicians about their future medical care, engagement with

the handout we provided, and suggestions for facilitating serious illness conversations (Supplemental Table 2). Subjects were compensated $48.

Sampling approach.—We aimed to enroll at least 50 patients to test the feasibility based on our prior similar study involving in-person intervention by trained physicians.[35] Consecutive sampling was used to recruit patients from January 2021 to January 2022. Due to COVID-19 restrictions prohibiting our research staff from being present in the emergency department, most participants were enrolled virtually after their emergency department visit using institution-approved Zoom. Trained research assistants screened for potential participants from the emergency department discharge list on the electronic medical records daily. Eligible patients were contacted within ten days of their discharge and scheduled for enrollment. When COVID-19 restrictions eased during the study period, some patients were approached in the emergency department or emergency department observation unit by research assistants and enrollments were completed with the study nurse in person. Enrollments were video recorded with patients' permission.

Intervention

The development and testing of *ED GOAL* (Supplemental Figure 1) has been described previously.[33-35] *ED GOAL* was conducted by trained research nurses in the emergency department or by graduate-level nursing students with >5 years of clinical experience. Briefly, the training involved 1-h didactic on the research methodologies, motivational interviewing, and serious illness conversation skills followed by a 4-h communication training with trained actors in the format described previously.[45,46] Upon completion, the trained nurses received bedside coaching by a doctorate-level, nurse champion with specialty-level certification in palliative care (SR) after every patient enrollment. Individual patient enrollments occurred over institution approved Zoom where patients were at home and our team (trained study nurse and research assistant) were at the hospital. After the enrollments, the study nurses documented what participants shared regarding their values and preferences should they get sicker in their medical records (Supplemental Table 1). These values and preferences categories were patient-tested and rigorously developed in prior studies (e.g., "What is important to you if you were to get sicker?" "What worries do you have about getting sicker?" etc.).[47-49] The study nurses communicated the findings to participants' outpatient clinicians and also provided patients a handout designed to encourage further serious illness conversations with their family and clinicians (Supplemental Figure 2).[50] The study team also facilitated scheduling of the follow-up appointment with participants' outpatient clinicians' offices whenever feasible and desired by participants.

Outcomes

Primary: feasibility outcomes.—We used the standardized framework for feasibility studies previously described[51]:

1. Recruitment: >50% of eligible and willing patients are enrolled;
2. Intervention administration: >50% of enrolled patients complete the intervention with our trained nurses; and

3. Retention: >50% of enrolled patients can complete the outcome assessments.

Secondary: exploratory patient-centered outcomes.—Though our primary objective was to test the feasibility, given that we contacted our participants anyways, we also measured exploratory patient-centered outcomes as our secondary outcomes. Our secondary outcomes were patient-reported readiness for serious illness conversations, measured by the 4-item, validated Advance Care Planning Engagement Survey[52] at baseline and follow-up. Advance Care Planning Engagement Survey measures patients' self-reported readiness to engage in serious illness conversations using a 5-point Likert scale ("not at all (1)" to "completely ready (5)"). To increase the feasibility of the survey administration in the emergency department settings, we used the validated, 4-item measures encompassing patient's readiness to: (1) appoint a health care proxy; (2) discuss goals of the healthcare proxy; (3) discuss goals and priorities with their outpatient clinician; and (4) sign official documents delineating their wishes for end-of-life care. Other secondary outcomes were: (1) proportion of participants who self-reported having spoken to their primary outpatient clinicians about their wishes for end-of-life medical care at follow-up (dichotomous outcomes, modified from previously validated measure)[53,54]; and (2) changes in serious illness conversation documentation in the medical records including new health care proxy, medical order for life-sustaining treatment form, and conversations about goals of care for the following 6 months (description of chart abstraction in Supplement Figure 3). We also collected responses to how well participants felt heard and understood about the medical care they would want if they were to get sicker (a validated, 5-point Likert scale measure ranging from "not at all (1)" to "completely (5)"[55] modified to fit the context of serious illness, see supplement) in the last 5 months of the study.

Statistical analysis

We conducted a descriptive analysis of the feasibility outcomes. We analyzed the Advance Care Planning Engagement Survey item-by-item and calculated a composite advance care planning engagement score for each subject by taking the average of the four-item responses. We conducted a pre/post analysis using Wilcoxon's signed-rank tests to detect the change in the composite advance care planning engagement score and the changes for each of the four questions. Though this study was not powered to detect the differences in patient-centered outcomes, we considered a p-value of 0.05 to be statistically significant to describe the general trend. The analysis was generated using SAS software (SAS Institute Inc. Cary, NC, USA).

Results

Primary: feasibility outcomes

Among 696 patients who met the illness and eligibility criteria, 116 were able to be contacted and were willing to participate in the study. Among 116 patients who were contacted and willing to participate, 76 patients were enrolled (65% recruitment rate). The most common refusal reasons were "not interested in research" or being "too busy" to participate. Four patients were later found ineligible, and one withdrew (Figure 1 Enrollment Flowchart). We enrolled 76 patients with a mean age of 64.4 years (SD 8.4), 49% were

female, and 58% of patients had metastatic cancer (Table 1). Study nurses spent a median of 27 min to complete the intervention, and 100% of enrolled subjects completed the intervention. Given most interventions were scheduled after the emergency department visit at the time of participants' convenience and conducted virtually, none were interrupted. To communicate what values/goal our patients shared during our intervention, we contacted 111 outpatient clinicians of our participants. 46 patients (61%) had one clinician they wanted us to contact, 24 (32%) had two, four (5%) had three, and one (1%) had five. One patient asked us not to share the enrollment findings with their clinicians, so we did not. We also scheduled appointments for seven patients who were interested in continuing this discussion with their outpatient clinicians. Among those who received the intervention, one died prior to the follow-up assessment. Of the remaining 75 patients, seven (9%) were lost to follow-up at 6 months (91% overall retention rate). During follow-up, 68 (91%) completed the Advance Care Planning Engagement Survey and the open-ended questionnaires. The loss to follow-up rates were 1% (1/75, 99% retention), 4% (3/75, 96% retention), and 9% (7/75, 91% retention) at 1, 3, and 6 months, respectively.

Secondary: exploratory patient-centered outcomes

Given our secondary outcomes were not powered to detect the differences, we report these as exploratory patient-centered outcomes (Tables 2 and 3). The composite advance care planning engagement score increased from 3.63 to 3.72 out of 5 one month after the intervention ($p = 0.38$). In an item-by-item analysis, self-reported readiness to engage with outpatient physicians increased from 2.78 to 3.31 ($p = 0.008$, item 3), whereas readiness to sign official papers putting your wishes in writing decreased from 3.26 to 3.16 ($p = 0.7217$, item 4, Table 2). Twelve patients reported that they talked to their primary outpatient clinician about their future care 1 month after the intervention. Thirty-seven patients reported that they talked to their families about their future care preferences 1 month after the intervention. Participants reported that the common reasons for not completing serious illness conversations were primary focus on immediate health concerns like medication adjustment ($n = 40$) and lack of scheduled appointments prior to follow-up ($n = 15$). Most participants reported that they felt "completely" heard and understood about what they would want in medical care if they were to get sicker by the study nurse ($n = 16$ out of 26, 61.5%) compared to their outpatient clinicians ($n = 4$ out of 26, 15.4%) after our intervention (Table 2).

A systematic review of the electronic medical records demonstrated that 16% ($n = 12/76$), 25% ($n = 19/76$), and 33% ($n = 25/76$) had new documentation of serious illness conversations with their outpatient clinicians at 1, 3, and 6 months, respectively. Trained research assistants reviewed 12 (15%) of the total subjects' medical records to assess interrater reliability for chart abstraction data. The electronic medical record documentation of health care proxy form (62–70%) and medical order for life-sustaining treatment form (1–11%) increased after the intervention within six months (interrater reliability 95%, Table 3).

Discussion

Main findings

We successfully recruited and retained seriously ill older adults to enroll in our serious illness conversation intervention study immediately after leaving the emergency department. Our trained study nurses delivered *ED GOAL* within 27 min virtually to all participants. *ED GOAL* led to significant increases in participants' self-reported readiness to talk to their outpatient clinicians about their goals for end-of-life care. It also led to an 18% increase in reported new serious illness conversations 1 month after *ED GOAL*, and 33% of participants had newly documented serious illness conversations on their electronic medical records within 6 months of participating. Therefore, we conclude that *ED GOAL* is feasible for specially trained nurses to complete and may lead to improved care of seriously ill older adults near the end of life.

What this study adds to the literature

Our findings were complementary to prior studies. The high baseline level of healthcare proxy designation (assessed by the Advance Care Planning Engagement Survey, question #1 and electronic medical record documentation) reflects the current state of serious illness conversations dissemination in the U.S.[56] After *ED GOAL*, some of the advance care planning engagement scores decreased, which is similar to findings reported previously. A psychological phenomenon exists where after receiving education about a specific task, individuals realize that they have not engaged in behaviors that they had thought they completed.[57,58] Discussing participants' values and possibility of getting sicker in the future allowed them to likely change their minds about their responses. The reported advance care planning engagement in naming healthcare proxy, talking to healthcare proxy, and signing wishes in writing may reflect this phenomenon (items 1, 2, and 4, respectively, in Table 2). The main intent of *ED GOAL* was to empower patients to engage in serious illness conversations with their outpatient clinicians. Therefore, the largely positive effect seen on Advance Care Planning Engagement Survey question #3 seems internally consistent with our main intent. Given these findings, we will likely focus our outcomes on the Advance Care Planning Engagement Survey question #3 in future studies.

The COVID pandemic necessitated us to deliver *ED GOAL* virtually. Yet, the virtual delivery of *ED GOAL* seemed to increase its feasibility by: (1) allowing participants to conduct the interview at comfortable home locations while leveraging the clinical significance of their recent emergency department visits; and (2) centralizing the trained study nurses at our institution and potentially expanding the reach of *ED GOAL* in other EDs nationally. By fostering a team of trained nurses who are passionate about high quality serious illness conversations, we increased the intervention fidelity and potential efficacy of *ED GOAL*, similar to other nurse-led interventions that are delivered virtually in the emergency department.[59,60]

Implications for practice

Predicting all possible scenarios for the future clinical decline is nearly impossible. Thus, all experts in palliative care agree that the focus of serious illness care may be in patient

preparation for in-the-moment decision making during anticipated acute health crisis.[61-63] Given that emergency department visits are sentinel moments in the illness trajectory of seriously ill older adults, facilitating serious illness conversations in the context of worsening serious illness would aid in this patient preparation. *ED GOAL* focuses on eliciting patients' values, goals, and priorities at these teachable moments in their illness trajectory. By allowing an opportunity for patients to express values, goals, and priorities, we aim to prepare these patients at high risk of near-term mortality to be as ready as they could be if/when emergent decision-making becomes necessary. The potential exists for such patient preparation to lead to better shared decision-making at the time of a medical emergency.

Limitations

This study has several limitations. Given the nature of the feasibility study, our sample size was small and not randomized, and the participants were recruited from one academic medical center and one community hospital in the northeast region of the U.S. To ensure that we captured participants from diverse backgrounds, we successfully overenrolled under-represented minorities to mimic the U.S. population demographics. Therefore, the outcomes that we collected were unlikely to be substantially different from all other emergency department settings or populations. The effect on patient-centered outcomes remains unknown. A randomized-design study is being conducted to answer this question. Finally, due to COVID-pandemic restrictions, most of our enrollments were conducted remotely via Zoom. The accessibility of this study for the participants was increased though clinical efficacy of our intervention may differ from that of the original design.

Conclusion

Performed by trained nurses, a novel, emergency department-based, brief motivational interview intervention is feasible to stimulate serious illness conversations and may improve advance care planning engagement and documentation in seriously ill older adults. The clinical effects of *ED GOAL* remain to be seen.

Supplementary Material

Refer to Web version on PubMed Central for supplementary material.

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Data sharing

All de-identified data are available upon request.

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What is already known about the topic?

- Emergency department visits are sentinel moments for seriously ill older adult to formulate their goals for end-of-life care.
- Yet, initiating/readdressing serious illness conversations is hindered by the lack of a feasible approach in the emergency department when led by physicians.

What this paper adds?

- This study demonstrates that an emergency department-based, nurse-led brief motivational interview to stimulate serious illness conversations is feasible and improved advance care planning engagement and documentation in seriously ill older adults.

Implications for practice, theory, or policy

- Wide implementation of our intervention may allow seriously ill older adults to engage in serious illness conversations after emergency department visits, which may ultimately lead to more goal-concordant care towards the end of life.

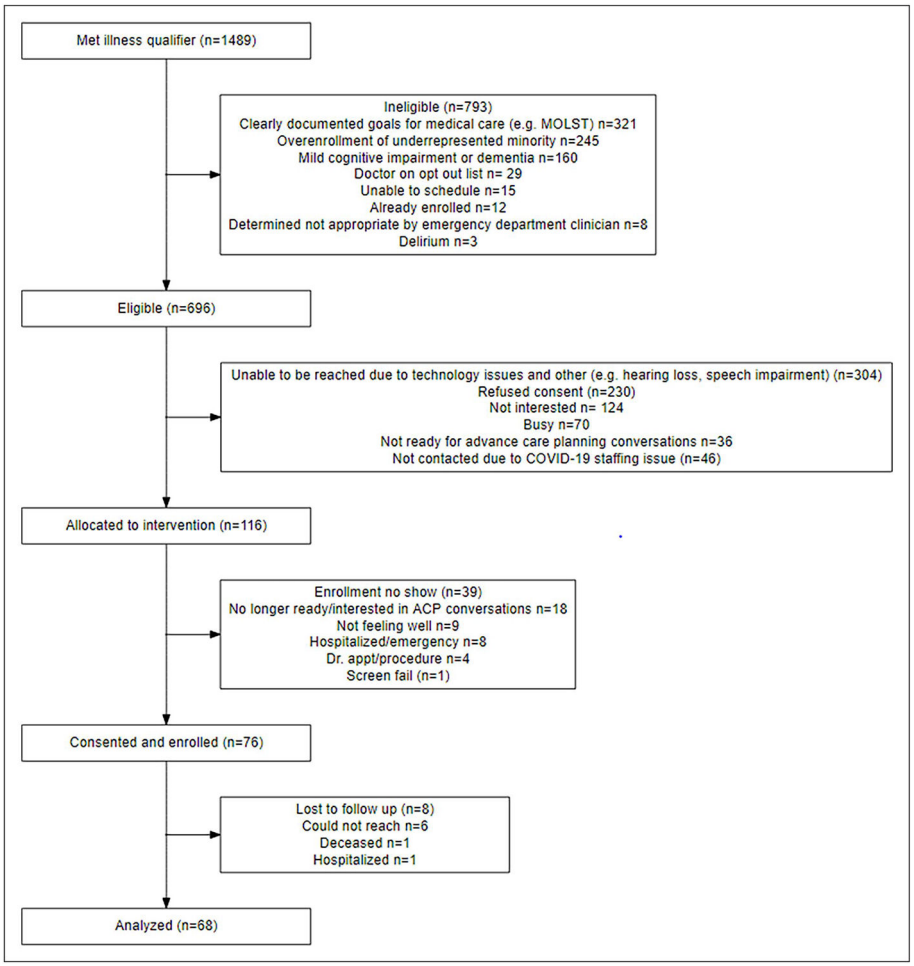

Figure 1.
Participants enrollment chart.

Table 1.

Patient demographics.

Mean age in years (SD)	64.4 (8.4)
Sex *n* (%)	
Female	37 (48.6)
Male	39 (51.3)
Race *n* (%)	
White	55 (72.4)
Black/African American	16 (21.1)
Asian	2 (2.6)
Other	1 (1.3)
Declined to state	2 (2.6)
Ethnicity *n* (%)	
Non-Hispanic/Latino	74 (97.3)
Hispanic/Latino	2 (2.7)
Serious illness *n* (%)	
Metastatic solid tumor cancer	44 (57.9)
Non-metastatic, solid tumor cancer with recent hospitalization	8 (10.5)
COPD on home oxygen	3 (3.9)
COPD without home oxygen with recent hospitalization	4 (5.3)
CHF NYHA Stage III/IV	1 (1.3)
CHF NYHA Stage I/II with recent hospitalization	4 (5.3)
CKD on dialysis	10 (13.2)
ED clinician predicted <12 month mortality	2 (2.6)
Charlson Comorbidity Index *n* (%)	
0–3	5 (6.6)
4–6	23 (30.3)
7–9	40 (52.6)
>9	8 (10.5)

Table 2.

Changes in patient-reported outcomes.

Advance care planning engagement (each item is measured on a 5-point Likert scale with higher scores indicating increased readiness)						**Before the intervention Mean (SD)**	**1 month after the intervention Mean (SD)**	***p*-value**
Item 1: How ready are you to sign official papers naming a person or group of people to make medical decisions for you?						4.55 (0.91)	4.38 (1.08)	0.0701
Item 2: How ready are you to talk to your decision maker about the kind of medical care you would want if you were very sick or near the end of life?						4.03 (1.38)	4.04 (1.21)	0.6096
Item 3: How ready are you to talk to your doctor about the kind of medical care you would want if you were very sick or near the end of life?						2.78 (1.45)	3.31 (1.24)	0.0079
Item 4: How ready are you to sign official papers putting your wishes in writing about the kind of medical care you would want if you were very sick or near the end of life?						3.25 (1.42)	3.16 (1.33)	0.7217
Patient self-reported outcomes 1-month post intervention Yes, *n* (%)								
Item 1: After leaving the ED, have you talked to your primary doctor about what care you would like in the future?								12/68 (18)
Item 2: After leaving the ED, have you talked to your family/loved ones about what care you would like in the future?								37/68 (54)
Heard and understood	**Not at all**	**Slightly**	**Moderately**	**Quite a bit**	**Completely**			***p*-value**
How much have you felt heard and understood by your PRIMARY DOCTORS about what you would want in medical care if you were to get sicker?	10/26 (38.46)	2/26 (7.69)	6/26 (23.08)	4/26 (15.38)	4/26 (15.38)			0.1319
After today's study interview, how much do you feel heard and understood by the STUDY NURSE about what you would want in medical care if you were to get sicker?	1/26 (3.85)	0	0	9/26 (34.62)	16/26 (61.54)			0.0015
After today's study interview, how interested would you be in receiving additional information preparing you to engage with your doctor in talking about what you want in your care if you were to get sicker?	0	0	1/26 (3.85)	9/26 (34.62)	16/26 (61.54)			0.0015

Table 3.

Changes in electronic medical record documentations.

Electronic medical record documentation	Preintervention (%)	@ 1 month (%)	@ 3 months (%)	@ 6 months (%)
Health care proxy form	47 (62)	47 (62)	50 (66)	53 (70)
Medical order for life-sustaining treatment form	1 (2)	2 (4)	6 (8)	8 (11)
Clinician documentation of end-of-life values and preferences	0 (0)	12 (16)	19 (25)	25 (33)

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