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A Hospital-Based Advance Care Planning Intervention for Patients with Heart Failure: A Feasibility Study

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Abstract

Background: Early discussions about advance care planning (ACP) have been associated with improved patient and caregiver outcomes for patients with serious illness. Many patients with heart failure (HF) may benefit from more timely ACP, in part due to the unpredictable trajectory of the disease.

Objectives: The purpose of this study was to evaluate the feasibility of implementing a multiple-component hospital-based intervention on completion of ACP forms among HF patients.

Methods: A brief hospital-based ACP intervention was led by a nonclinician health educator that included (1) an educational video about shared decision making and (2) a protocol to engage HF providers in patients' ACP decision making after the hospitalization. We surveyed patients regarding attitudes toward the ACP intervention and studied completion rates of advance directives (ADs) or physician orders for life sustaining treatment (POLST) forms six months following discharge.

Results: The educational video component of this intervention was considered helpful by 92% of participants, and 70% said they were more likely to talk with their physician about their end-of-life preferences after watching the video and interacting with the health educator. Of 37 participants, 49% had evidence of completion of an AD or POLST in their medical records six months after the index hospitalization compared to 32% before the intervention. The number of patients having a signed scanned POLST form increased from 10 (27%) before the intervention to 16 (43%) six months after the intervention ($p=0.03$).

Conclusions: A hospital-based ACP intervention using nonclinician health educators is feasible to implement and has the potential to facilitate the ACP process.

Introduction

HEART FAILURE (HF) is a chronic disease associated with high rates of readmission and high inpatient costs.¹ Despite recent advances in HF therapy, prognosis remains poor, even worse than that for many types of cancers, and survival decreases significantly over time.² Hospitalization for HF is an indicator of an even poorer prognosis; 25% of patients hospitalized for HF die within six months of discharge.³

Prior research has found that the end-of-life care preferences of patients hospitalized with HF change over time⁴ and after hospitalizations,⁵ likely as a result of their hospital ex-

perience.^{5,6} Exposure to life-sustaining treatments during hospitalization provides patients with the experience necessary to help contextualize their advance care planning (ACP) choices and may provide a timely opportunity to educate patients about ACP before discharge.⁷

Research supports the promise of multimedia decision aids for ACP.^{6,8,9,10} In this study at two academic medical centers we explored the feasibility of a brief educational video tool combined with a hospital-based health educator in initiating ACP dialogue aimed at improving completion rates of advance directive (AD) and physician orders for life sustaining treatment (POLST) forms.

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Methods

Subjects

Patients 50 years of age or older admitted for treatment of HF, or actively treated for HF during admission for a related problem, were selected by reviewing consecutive medical records at the University of California, Los Angeles (UCLA) and the University of California, Davis (UCD) medical centers from February through December 2012. This study was completed in conjunction with the Better Effectiveness After Transition for Heart Failure study (BEAT-HF); patients who refused participation or were ineligible for BEAT-HF were considered for this ACP pilot study.¹ Patients were excluded if they had dementia, a history of transplant, or were on the waitlist for transplant; did not speak English; did not have a phone number; did not have a primary care physician; were not able to comply with the study intervention; or were suffering from acute myocardial infarction or had been scheduled for coronary artery bypass graft, percutaneous coronary intervention, or valvular surgery during the admission. Health educators approached patients in the hospital for potential enrollment using an informed consent form and a protocol approved by the UCLA institutional review board.

Intervention

The hospital-based ACP intervention was led by a non-clinician health educator and included (1) an educational video about shared decision making aimed at activating patients to participate in ACP and (2) a protocol to engage patients' outpatient HF providers in ACP counseling and decision making posthospitalization.

Health educators underwent a four-hour training session on communication skills about ACP based on materials available online on the Coalition for Compassionate Care of California website.¹¹ Health educators played excerpts of the video "Looking Ahead: Choices for Medical Care When You're Seriously Ill" developed in 2008 by the Foundation for Informed Medical Decision Making for all recruited patients at the bedside using a portable video player. Family members, particularly surrogate decision makers, were also encouraged to view the video. Due to time constraints, four of the most relevant chapters of the video were shown, covering topics such as the importance of having a health care proxy, the role of ADs and living wills, the need for identifying preferences for end-of-life care, and the importance of talking with family members. Video viewing time was less than 15 minutes.

Health educators encouraged the completion of ACP documents prior to hospital discharge, including specification of a surrogate decision maker and documentation of preferences for care. Discussion of detailed questions regarding HF, individualized prognosis, and specific treatment options was deferred by the health educator to the patient's primary care physician. Patients were educated about formal documentation of preferences including the POLST form and were given copies of the video, accompanying booklet, as well as samples of ADs. They were encouraged to view the video and continue discussions in the home setting. They were also encouraged to talk with their primary care physician and obtain assistance with completing ACP documentation after discharge.

Upon the patient's discharge from hospital, a packet was mailed to the identified primary care physician containing (1) an introductory letter from the principal investigator, (2) a copy of the intervention video and accompanying booklet, and (3) a POLST form and accompanying provider brochure about POLST. The letter notified the provider that the patient had been hospitalized for HF and had viewed the intervention video as part of their participation in a study regarding ACP for HF patients. If the patient had agreed to provide information about the discussion with the health educator, a summary of the discussion was also included in the packet. A follow-up email one week after expected receipt of the mailed packet was sent to the provider.

Surveys and data collection

After each patient watched the video, a baseline survey was administered verbally by the health educator to assess acceptability of the video, overall preferences for care, and prior experience with ACP. The baseline survey was adapted from the Assessing Care of Vulnerable Elders study survey¹² and included a mix of open-ended, close-ended, and multiple choice questions. Patients or next of kin (when patients were unable to participate) were then contacted 180 days following discharge regarding AD and POLST completion. Electronic medical records were reviewed six months following discharge to identify any AD or POLST forms.

Statistical methods

Patients' responses to baseline and follow-up surveys were analyzed using statistical software SAS (SAS version 9.1; SAS Institute Inc., Cary, NC). McNemar's test was used for analyses of before- and after-intervention data using MedCalc software version 15.2.2 (MedCalc Software, Ostend, Belgium). *P* values less than 0.05 were considered statistically significant.

Results

Enrolled patients' demographic characteristics are summarized in Table 1. Of 151 patients who were initially screened, 93 met the eligibility criteria and were approached by a health educator. Of the approached patients, 30 (32%) were deemed ineligible due to one or more of the aforementioned exclusion criteria. Of the 63 eligible patients, 38 (60%) consented to participate in the study, while 25 (40%)

TABLE 1. DEMOGRAPHICS, END-OF-LIFE PREFERENCE, AND SURROGATE DECISION MAKER STATUS

Gender, <i>n</i> (%)	
Male	19/37 (51%)
Age, years	
Mean	70.6
Median	73
Standard deviation	12.4
End-of-life preference, <i>n</i> (%)	
Expressed at least 1 preference	33/37 (89%)
Refused/did not know	4/37 (11%)
Surrogate decision maker, <i>n</i> (%)	
Knew whom they wanted to assign	30/37 (81%)
Refused/did not know	7/37 (19%)

refused to participate. One enrolled patient withdrew from participation after the initial intervention.

Of the 37 enrolled patients, 19 (51%) were male and 18 (49%) were female and the mean age was 71 years. Most (34/37 or 92%) patients said the video was helpful, and 32 (86%) said they did not dislike anything about the video. Patient responses to open-ended question about the video included, "It helped to make the right choice;" "It was very informative;" and "It was straightforward, precise, and pleasant." Some complaints about the video included that "It was too long," "It was redundant," or "It was difficult to understand." A majority (31/37 or 84%) of patients believed they knew what an AD or durable power of attorney was before the video, but of the six (16%) patients who did not know, four reported improved understanding after the video. Most participants (26/37 or 70%) said they were more likely to talk with their physician about their end-of-life preferences after viewing the video.

Based on patients' self-report and chart review prior to the intervention, 21 (57%) patients had signed an AD or a POLST form and 16 (43%) had not completed either form or refused to answer at the time of enrollment. Of 33 patients who self-reported not having completed a POLST or were not sure about it before enrollment, 9 (27%) actually had a POLST form in their medical record. Of the 16 patients who said they had signed an ACP document (AD or POLST), only 5 (31%) had evidence of that actual form in the medical record.

As shown in Table 1, most patients reported that they had already named a surrogate decision maker in a formal document or knew whom they would want. The majority of patients were able to indicate clear care preferences (favor comfort versus life prolongation) for three health states (being attached to a ventilator, being fed through a tube in stomach, in a coma); yet about half of patients had not completed formal ACP documents.

Six-month follow-up

Six months after initiation of the ACP intervention, 14 (38%) patients and 9 (24%) next of kin were surveyed over the phone, whereas 14 (38%) patients or their next of kin could not be reached (despite several attempts) at any of the available phone numbers or declined to respond. Medical records of 100% of participants were reviewed to find any documented ACP. It is notable that some ACP documents might not have made it into the medical records if the patient's primary care and cardiology care were outside of the UCD/UCLA system. Of the four participants who reported having completed a new ACP document at the six-month survey, two had evidence of it in their medical records. Eight

other patients had completed new ACP documents, according to their medical records. In total, 12 participants (32%) either reported or had evidence in their medical records of completing new ACP documents (AD or POLST) after the intervention. Four of these patients did not have any prior document, three completed a new type of document, and five completed a new document to replace a prior document of the same type. Sixty-two percent of patients had completed an AD or POLST six months after the index hospitalization compared to 51% before intervention. The number of patients having a POLST form increased from 13 (35%) before the intervention to 19 (51%) six months after the intervention ($p=0.03$).

Given that a patient's self-report can either be falsely positive or falsely negative, we did a secondary analysis using only ACP forms that were documented in the patients' electronic medical records. This analysis provides a conservative estimate of forms completed before and after intervention. According to this analysis, 49% of patients had signed AD or POLST forms in their medical records six months after the index hospitalization compared to 36% before the intervention (difference not significant). The number of patients having a signed scanned POLST form increased from 10 (27%) before the intervention to 16 (43%) six months after the intervention ($p=0.03$), showing a significant trend (see Table 2).

Discussion

This study demonstrates the feasibility of conducting an ACP educational intervention in the inpatient setting with a nonclinician health educator. Most patients felt that the video was valuable and reported that they were more likely to speak to their physician about this topic after watching the video and interacting with the health educator. This brief and simple intervention led to increased completion of POLST forms. Future research is needed to test this result using a more rigorous study design.

The results of our survey show that despite the fact that most patients held clear end-of-life care preferences and were able to name a preferred surrogate decision maker, only about half had formally documented these wishes. This is consistent with prior studies demonstrating low rates of ACP documentation.^{12,13} Documentation is a critical piece of ACP, allowing clinicians to provide care consistent with expressed preferences and facilitating consensus regarding care plans. To facilitate documentation, we engaged patients by showing them an ACP video, encouraged family involvement, and notified the providers by mail and follow-up email. We observed in this small pilot study a significant trend of increased formal documentation via the POLST form. Use of more

TABLE 2. COMPARISON OF HAVING SIGNED ACP FORMS IN THE MEDICAL RECORD BEFORE AND AFTER INTERVENTION

Completed ...	Before	After	Change	p-value (two-tail)
AD	5/37 (14%)	6/37 (16%)	+3%	1
POLST	10/37 (27%)	16/37 (43%)	+16%	0.03
AD and POLST	2/37 (5%)	4/37 (11%)	+5%	0.50
AD or POLST	13/37 (36%)	18/37 (49%)	+14%	0.06
No form	24/37 (65%)	19/37 (51%)	-14%	0.06

ACP, advance care planning; AD, advance directive; POLST, physician orders for life sustaining treatment.

interactive multimedia such as animated websites prepared for persons with low health literacy⁹ may result in higher rates of completion of ACP forms.

Patients' readiness can facilitate the act of completing an ACP form.¹⁴ Watching an educational video on end-of-life care in the hospital can potentially activate patients and help them be more prepared to engage in similar discussions with their primary care physician in an outpatient setting. The fact that 8 of the 12 patients who completed documents after the intervention already had one type of ACP may indicate that people who were previously engaged in ACP were more inclined to complete new documents, presumably based on changes in care preferences. It is important to note that ACP is not a one-time decision-making event, but should be a dynamic process, as patients' understanding from their disease trajectory changes over time.¹⁵ A video such as the one used in this pilot study is an example of a tool to assist in this process.

We found some inconsistency between patient report and medical record documentation of ACP form completion, as others have reported in the literature. Improvements in communication and processes of care may be needed to address this issue.¹² Oregon has recently instituted a POLST registry to address this issue, and similar interventions in other states may be beneficial.

Limitations

In this study we were unable to obtain follow-up information about ACP-related discussions from the patients' primary care physicians, and for this reason it is unknown to us if our postdischarge intervention for providers had any impact on having them engaged in the ACP-related discussions. Follow-up calls with participants shortly after discharge could have helped remind them to initiate discussion with their provider while addressing any new questions or concerns. We were not able to reach 38% of patients (or their next of kin) for the six-month follow-up, which limited our ability to assess completion of ACP documentation. Considering the high mortality rate of HF patients and the fact that many ACP forms do not get uploaded into medical charts, a shorter follow-up time might lead to a higher response rate in future studies. This study did not include Spanish- or other-language-speaking patients, because the intervention video was available only in English. More research is warranted to understand cultural barriers to ACP that might impact the feasibility of using this video in inpatient settings.

Conclusions

This study demonstrates that implementing a hospital-based ACP intervention using nonclinician health educators is feasible, facilitates the ACP process, and may activate patients to engage in ACP with their physician and/or family. Future research, ideally using random patient allocation, is needed to examine the effectiveness of such an intervention at facilitating ACP.

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Author Disclosure Statement

No competing financial interests exist for the authors.

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