

Availability of Advance Care Planning Documentation for Older Emergency Department Patients: A Cross-Sectional Study

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Abstract

Introduction: Increasing advance care planning (ACP) among older adults is a national priority. Documentation of ACP in the electronic health record (EHR) is particularly important during emergency care.

Objective: We sought to characterize completion and availability of ACP among a subset of older patients at an academic emergency department (ED) with an integrated EHR.

Methods: In this cross-sectional study, patients were eligible if aged ≥ 80 years or aged 65–79 with ≥ 1 indicator of high risk for short-term mortality. Patient-reported completion of ACP and availability of ACP documentation in the EHR were assessed.

Results: Among study patients ($n=104$), 59% reported completing some form of ACP: living will 52%, healthcare power of attorney 54%, do not resuscitate 38%, and medical orders for scope of treatment or physician orders for life-sustaining treatment 6%. Whites were more likely to report having some form of ACP than minorities (66% vs. 37%, $p < 0.01$), as were patients aged ≥ 80 years than those aged 65–79 (79% vs. 44%, $p < 0.01$). Only 13% of all patients had either a current code status or any other current ACP documentation in the EHR. Among patients whose primary care provider uses the same EHR system as the study ED, only 19% had a current code status or any other ACP documentation in the EHR.

Conclusion: In a sample of older ED patients likely to benefit from ACP, few patients had documented end-of-life care preferences in the EHR.

Introduction

THE QUALITY OF MEDICAL CARE at the end of life is a major public health concern.¹ Many U.S. older adults receive more care than they desire, resulting in increased suffering,^{1,2} disruption of the bereavement process,³ and increased costs.^{4–6} One essential step in addressing this problem is enabling patients to define their preferences before they become too ill to control their care through the process of advance care planning (ACP). Maximizing the effectiveness of ACP requires that patients' preferences be documented in a manner that is readily available to emergency providers, who are often responsible for critical end-of-life decisions. Prior research has examined availability of ACP documents during emergency care based on patient report.^{7–9} The only study of ACP documentation availability within the

electronic health record (EHR) for emergency department (ED) patients assessed availability during hospitalization, after admission orders had been placed.¹⁰ The purpose of this study was to characterize and compare patient-reported completion of ACP preferences and real-time availability of ACP documentation in the EHR among older adults receiving care in the ED.

Methods

Study design, setting, and population

This was a prospective cross-sectional study of English-speaking patients aged 65 years and older presenting to an academic ED in the southeastern United States between February 2 and April 29, 2016. Study participants provided verbal consent to answer questions and signed consent for

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permission to review medical records. The study was approved by the local institutional review board.

Patients were eligible if they were cognitively intact (Six-Item Screener ≥ 4),¹¹ and either (1) aged 80 years and older or (2) aged 65–79 years with high risk of death in the next year. Patients aged 80 years and older were included as 10-year survival at age 80 is less than 50%.¹² Indicators of high mortality risk included two or more hospitalizations in the past 6 months^{13–15}; inability to walk^{16,17}; stage IV or metastatic cancer^{14,18}; previous diagnosis of a stroke^{19,20}; home oxygen supplementation or experiencing shortness of breath with walking short distances²¹; end-stage renal disease^{18,22,23}; or previous diagnosis of serious liver disease with ascites,²⁴ gastrointestinal bleeding,²⁵ or hepatic encephalopathy.²⁶ We subsequently removed serious liver disease as a criterion because no patients reported this condition. We excluded patients in state custody, receiving psychiatric evaluation or receiving time-critical interventions.

Measures

The study questionnaire assessed patient demographics, presence of a primary care provider (PCP), and completion of ACP documents. Research assistants (RAs) also recorded if the patient was accompanied in the ED, and if unaccompanied, if a representative was reachable by phone. Primary outcomes were (1) patient-reported completion of any ACP documents and (2) the availability of ACP documents or orders addressing code status in the EHR. Patients were asked whether they had a living will, healthcare power of attorney (HCPOA), do not resuscitate (DNR) order, or medical orders for scope of treatment (MOST) or physician orders for life-sustaining treatment (POLST). If patients had completed any of these documents, they were asked how they could be accessed. A structured medical record review approach developed by a team of emergency and geriatrics physicians was used to determine the availability of ACP documents in the EHR. RAs searched the current code status, the code status order history, and for any scanned ACP documents. RAs then searched the “advance directives” portion of the patient’s demographics and for any palliative care consults.

Statistical analysis

We calculated the percentage of patients with ACP documentation by patient report and by availability in the EHR. Percentages of patients with ACP documentation by subgroups are described using 95% confidence intervals. Inter-rater reliability for the 7 indicators of high short-term mortality risk was assessed with the kappa statistic for 30 duplicated interviews. Statistical analyses were conducted using STATA 14.1 (StataCorp LP, College Station, TX).

Results

Of 168 subjects screened, 104 met eligibility criteria and signed consent. The most common reasons for exclusion were no indicator of high mortality risk ($n = 33$) and cognitive impairment ($n = 21$). Only 10 patients declined consent. Study patients ($n = 104$) were white (74%), aged 65–79 (59%), and accompanied in the ED (70%; Table 1). Nearly all (93%) had a PCP, of whom 72% used the same EHR system as the study ED. Inter-rater reliability for the indicators of

TABLE 1. CHARACTERISTICS OF THE STUDY SAMPLE (N=104)

Characteristic	N (%)
Female	46 (44)
Race	
White	77 (74)
Black	26 (25)
Mixed race	1 (1)
Age 65–79 ^a	61 (59)
Metastatic cancer	9 (15)
Home oxygen or SOB ^b	46 (75)
ESRD on dialysis	3 (5)
Two hospitalizations	21 (34)
Unable to walk	8 (13)
Stroke ^c	14 (25)
Age ≥ 80	43 (41)
Representative in room ^d	69 (70)
Representative phone number available ^e	28 (97)
Primary care provider	97 (93)
Primary care provider affiliated with study institution ^f	69 (72)

^aIndicators of high risk for short-term mortality not mutually exclusive, percentages are among patients aged 65–79 years ($n = 61$).

^bAmong patients aged 65–79 years with home oxygen or SOB, CHF = 16 (26%), COPD = 16 (26%).

^cTotal $n = 56$.

^dTotal $n = 98$.

^eAmong patients without a representative present, $n = 29$.

^fTotal $n = 96$.

SOB, shortness of breath; CHF, congestive heart failure; COPD, chronic obstructive pulmonary disease.

life-limiting illness was high (percentage agreement $>90\%$, kappa values 0.63–1.00; Table 2).

By patient report, 59% had completed some form of ACP: living will 52%, HCPOA 54%, DNR 38%, or MOST/POLST 6%. Patients aged 80 and older were more likely to report completion of ACP than patients aged 65–79 (79% vs. 44%, $p < 0.01$; Table 3). ACP was also more common among whites than among nonwhites (66% vs. 37%, $p < 0.01$). Patients with PCPs affiliated with the study institution were more likely to report completion of ACP (65% vs. 41%, $p = 0.03$).

When asked where the ACP documents could be obtained, patients reported that the documents were at home ($n = 33$, 37%), with family ($n = 15$, 17%), with a PCP or on file at the

TABLE 2. PERCENTAGE AGREEMENT AND KAPPA VALUES FOR INDICATORS OF HIGH RISK FOR SHORT-TERM MORTALITY

Indicator	Agreement (%)	Kappa
Metastatic cancer	96.67	0.65
Home oxygen or shortness of breath	93.33	0.87
ESRD on dialysis	96.67	0.65
Two hospitalizations in past 6 months	93.33	0.81
Unable to walk	93.33	0.63
Prior stroke	100.00	1.00

Data are from 30 duplicated evaluations. ESRD, end-stage renal disease.

TABLE 3. PATIENT-REPORTED ADVANCE CARE PLANNING DOCUMENTS, BY PATIENT SUBGROUPS

Characteristic	Living will	HCPOA	DNR/DNI	MOST/POLST	Any
Gender					
Male	50 (37–63)	47 (34–59)	28 (18–40)*	3 (0.9–13)	53 (41–66)
Female	54 (40–68)	63 (48–76)	50 (36–64)	9 (3–21)	65 (51–78)
Race					
White	60 (49–70)*	60 (49–70)*	43 (32–54)*	7 (3–15)	66 (55–76)*
Black	27 (13–47)	35 (19–54)	19 (8–39)	4 (0.5–23)	35 (19–54)
Mixed race	100 (21–100)	100 (21–100)	0 (0–80)	0 (0–80)	100 (21–100)
Age					
65–79	36 (25–49)*	39 (28–52)*	23 (14–35)*	2 (0.2–11)*	44 (32–57)*
≥80	74 (60–85)	74 (60–85)	58 (43–72)	12 (5–25)	79 (64–89)
Representative in room ^a					
Yes	52 (41–64)	52 (41–64)	36 (26–48)	4 (1–13)	57 (45–68)
No	52 (34–69)	52 (34–69)	38 (22–56)	7 (2–24)	59 (40–75)
Primary care provider					
Yes	53 (43–62)	54 (44–63)	37 (28–47)	6 (3–13)	59 (49–68)
No	43 (14–77)	57 (23–86)	43 (14–77)	0 (0–35)	57 (23–86)
Primary care provider affiliated with study institution ^b					
Yes	57 (45–68)	62 (50–73)*	41 (30–53)	7 (3–16)	65 (53–76)*
No	41 (24–60)	33 (18–53)	30 (16–49)	0 (0–12)	41 (24–60)

Values are in percentage (95% confidence interval).

^a*n* = 98.

^b*n* = 96.

HCPOA, healthcare power of attorney; MOST/POLST, medical orders for scope of treatment/physician orders for life-sustaining treatment.

**p* ≤ 0.05 for chi-square test comparing proportion of patients reporting completion of these documents for the dichotomous characteristic.

hospital (*n* = 13, 15%), or in a safety deposit box (*n* = 5, 6%). Of the 13 patients who reported that an ACP document was on file at the hospital, 4 were verified on EHR review. Only one patient brought a copy of their ACP documentation to the ED.

Only 8% of subjects had a current code status (full code or DNR), and only 13% had any form of ACP document in the EHR (Table 4). Although 99% said they knew who they would want making healthcare decisions if they were unable to do so, 54% reported having completed an HCPOA and only 3% had a scanned HCPOA form in their EHR. There were no MOST/POLST forms or palliative care consultations in the EHR. Even among patients whose PCPs were affiliated with the study hospital (*n* = 69), only 19% had either a current code status or scanned ACP documentation in the EHR. Sixty-four (62%)

patients had an inactive code status in their EHR (52 full code). When asked, 71% of study patients said they would be willing to participate in a clinical trial to evaluate an ED-based process to promote ACP.

Discussion

In this sample of ED patients likely to benefit from ACP due to advanced age or a condition conferring high risk of short-term mortality, more than half reported completing some form of ACP, but only 8% had a current code status and only 13% had any ACP documentation in their EHR. Patient-reported completion of ACP was more common among patients aged 80 years and older, whites, and those with a PCP affiliated with the study institution, but even among these patients, availability of these documents in the EHR was less than 25%.

The low availability of ACP documentation in the EHR indicates that patients and providers must do more than initiate conversations about end-of-life care: they must ensure that preferences are readily accessible to emergency providers. In our sample, the most common ACP documentation in the EHR was an inactive code status from a previous hospital admission, a particularly problematic form of documentation. First, it is unclear whether these orders reflect a conversation with the patient or were generated by default during admission. Second, it is unclear whether emergency providers would or should honor an inactive code status during a new ED presentation.^{27–29} In contrast, the least common ACP documentation in the EHR was MOST/POLST forms. Although they have received growing support nationwide,³⁰ within the study site's state,

TABLE 4. COMPLETION OF ADVANCE CARE PLANNING AMONG STUDY PATIENTS, BY PATIENT REPORT AND BY AVAILABILITY IN THE ELECTRONIC HEALTH RECORD

Document	Patient report N (%)	Available in EHR N (%)
Living will	54 (52)	5 (5)
HCPOA	56 (54)	3 (3)
DNR	39 (38)	3 (3) ^c
MOST/POLST	6 (6)	0 (0)
Full code	—	5 (5)
Any of the above	61 (59)	13 (13) ^a

Categories are not mutually exclusive.

^aIncludes current code status and scanned advance planning documents; not mutually exclusive

DNR, do not resuscitate; EHR, electronic health record.

nursing home healthcare professionals have expressed concern that MOST/POLST forms are lost during transport between nursing homes and hospitals and, even when the forms are available, that they are not followed by hospital staff.³¹ Because of the almost complete conversion to EHR among hospitals and EDs,³² simplifying the documentation of and access to end-of-life care preferences in the EHR may improve availability.

This study has several limitations. First, inclusion criteria for patients aged 65–79 years were selected based on existing literature for conditions likely to reduce life expectancy and on ease of applicability by individuals without advanced medical training. These criteria likely missed some patients who would benefit from ACP and included some patients with low short-term mortality risk. Second, not all forms of ACP have equal value in conveying a patient's preferences. Designating a HCPOA is potentially valuable, but only if this can accurately convey the patient's preferences under a variety of clinical circumstances and if the designee is available in an emergency.^{33–36} Living wills also vary with regard to the amount of detail provided. We did not examine the quality or accuracy of designees and documents, only whether or not they were available in the EHR. Third, patient-reported completion of ACP documentation may be inaccurate. For example, patients may think that identifying an emergency contact constitutes identification of a HCPOA. Finally, we conducted this study at a single academic ED in the southeast, and we excluded patients who were cognitively impaired and who did not speak English. Future research should examine the availability of ACP in the EHR in other regions of the United States and for cognitively impaired and non-English-speaking patients.

Conclusion

In this sample of older ED patients, 59% reported having completed some form of ACP, but this documentation was available in the EHR in only 13% of patients. Interventions are needed to increase the availability of end-of-life care preferences during emergency care.

Author Disclosure Statement

No competing financial interests exist.

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