Resident Approaches to Advance Care Planning on the Day of Hospital Admission

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Background: Advance care planning is the process of establishing a patient's goals and preferences for future care. Previous research has demonstrated a need to improve patient-physician communication around advance care planning. A critical time for advance care planning conversations is the day of admission to the hospital.

Methods: A survey of internal medicine residents was administered at Duke University Medical Center and the Brigham and Women's Hospital, 2 major academic teaching centers. Residents were questioned about their approaches to advance care planning on their last on-call admitting day.

Results: Of 347 residents solicited, 292 (84.1%) participated in the survey. Residents reported that they established preferences for cardiopulmonary resuscitation (CPR) with 70.5% of patients, established a health care proxy with 33.7% of patients, discussed goals and values concerning end-of-life care with 32.0% of patients, and asked 35.6% of patients if they had an advance directive. Although 89.0% of residents had observed an advance care planning discussion model, only 66.4% had received teaching and 36.6% had received feedback about advance care planning conversations. In multivariable analysis, having received feedback about advance care planning conversations was associated with a higher percentage of conversations about health care proxy and goals and values related to the end of life.

Conclusions: Residents discuss patient preferences for CPR on the day of admission with most patients. Preparing residents, particularly through feedback, may improve communication around other elements of advance care planning.

Arch Intern Med. 2006;166:1597-1602

Advance care planning is the process by which patients, in conjunction with their physicians and loved ones, establish goals and preferences for future care. Advance care planning may include talking about assigning a health care proxy, discussing preferences for cardiopulmonary resuscitation (CPR), or eliciting goals and values related to the end of life. A health care proxy assumes decision making for health care when a patient loses decision-making capacity. Cardiopulmonary resuscitation is the attempt to resuscitate a person who has died (pulseless and/or without effective breathing). A conversation about goals and values related to the end of life may include preferences for quality or quantity of life, fears and concerns about dying, and treatment goals and preferences. Advance directives or living wills are written documents reflecting patient preferences for end-of-life care. When done well, advance care planning conversations take time, begin with a patient-centered discussion of values and goals related to the end of life, and evolve in the context of a strong patient-physician relationship. Unfortunately, multiple studies of in-hospital advance care planning have identified problems in patient-physician communication.

Since the passage of the Patient Self Determination Act in 1990, all patients admitted to the hospital must be asked if they have an advance directive. While this function is often performed by administrators, physicians, especially residents, frequently engage in discussions about advance directives, CPR, and other end-of-life decisions on the day of admission. To our knowledge, no previous study has investigated how physicians approach advance care planning the day patients are admitted to the hospital.

We surveyed internal medicine residents to determine the frequency with which they discuss advance care planning on the day of admission as well as their preparation for and attitudes about these discussions.
Institutional review boards of both institutions approved the study. Surveys were self-administered over 2 months in the spring of 2005 and at Duke over 2 months in the fall of 2005. Surveys were self-administered online survey instrument. Residents at BWH were surveyed responders. The data were collected using Surveymonkey, an online survey instrument. Residents at BWH were surveyed over 2 months in the spring of 2005 and at Duke over 2 months in the fall of 2005. Surveys were self-administered. Institutional review boards of both institutions approved the study.

Survey questions were generated from a review of the advance care planning literature, consultation with palliative care experts, and focus groups with internal medicine residents. To enhance survey generalizability, questions about preparation for advance care planning discussions were adopted from a previous large national survey. Early versions of the survey were tested with fellows in palliative care.

Residents were asked to recall the most recent day they admitted patients, the number of patients they admitted, and how many of these patients they discussed advance care planning, including preferences for CPR, health care proxies, and goals and values related to the end of life. Residents were also asked if they inquired about patients’ previously documented advance directives. The primary outcome variables were the frequency and average percentage of advance care planning topics discussed. For example, if, residents at Duke admitted an average of 6 patients and discussed health care proxy with 2 of them, then the frequency and percentage of health care proxy discussions at Duke are 2 and 30%, respectively. Other questions were about residents’ attitudes, beliefs, and preparation concerning admitting-day advance care planning conversations. The survey is available on request.

For the purpose of analysis, data from 4- and 5-point Likert scales were collapsed into 2 categories (agree and disagree). Data from undecided categories were discarded. In subgroup analysis, frequencies and percentages of advance care planning topic discussed were compared by site and demographic characteristics of study participants. Differences between outcome by site (BWH or Duke) were analyzed using the chi² test for categorical variables and the t test for continuous variables. We carried out a regression analysis of the percentage of advance care planning topics discussed with preparation for advance care planning, adjusted for covariates of age, sex, race, and PGY. We additionally adjusted for site for the topics of “health care proxy” and “goals and values” because there were statistically significant differences between the percentages of discussion of these topics between the 2 sites. The least squares mean method was used to calculate the percentage of advance care planning topics addressed by residents who had or had not received preparation for advance care planning. Data were analyzed using SAS software, version 9.1 (SAS Institute, Cary, NC).

### RESULTS

Characteristics of study participants are listed in Table 1. A total of 164 (89.1%) of 184 residents from BWH and 128 (78.5%) of 163 residents from Duke participated in the survey, for a combined participation rate of 84.1%. Nonrespondents were similar to respondents in age, sex, race, and PGY. Twelve of the 292 survey responses had missing values for some of the measures used in the analysis (10 from BWH and 2 from Duke). Because missing data for responses accounted for less than 20% of the total

### METHODS

#### SUBJECTS

We solicited survey participation via e-mail from all 347 internal medicine residents at 2 major academic teaching hospitals, the Brigham and Women’s Hospital (BWH) and Duke University Medical Center (Duke). The composition of internal medicine residents by postgraduate year (PGY) at these hospitals is reflective of the national distribution of internal medicine residents. Two reminder e-mails were sent to nonresponders. The data were collected using Surveymonkey, an online survey instrument. Residents at BWH were surveyed over 2 months in the spring of 2005 and at Duke over 2 months in the fall of 2005. Surveys were self-administered. Institutional review boards of both institutions approved the study.

**Table 1. Characteristics of Respondents**

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>BWH</th>
<th>Duke</th>
<th>(P) Value†</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Residents, No.</td>
<td>164</td>
<td>128</td>
<td>.54</td>
<td>292</td>
</tr>
<tr>
<td>Women</td>
<td>79 (48.2)</td>
<td>57 (44.5)</td>
<td></td>
<td>136 (46.6)</td>
</tr>
<tr>
<td>Race/Ethnicity</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>White</td>
<td>99 (60.4)</td>
<td>80 (62.5)</td>
<td></td>
<td>179 (61.3)</td>
</tr>
<tr>
<td>Black</td>
<td>8 (4.9)</td>
<td>7 (5.5)</td>
<td></td>
<td>15 (5.1)</td>
</tr>
<tr>
<td>Hispanic</td>
<td>11 (6.7)</td>
<td>1 (0.8)</td>
<td>.71‡</td>
<td>12 (4.1)</td>
</tr>
<tr>
<td>Asian</td>
<td>42 (25.6)</td>
<td>34 (26.6)</td>
<td></td>
<td>76 (26.0)</td>
</tr>
<tr>
<td>Other</td>
<td>4 (2.4)</td>
<td>6 (4.7)</td>
<td></td>
<td>10 (3.4)</td>
</tr>
<tr>
<td>Age, y</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mean (SD)</td>
<td>29.7 (2.2)</td>
<td>28.5 (3.1)</td>
<td>&lt;.001</td>
<td>29.2 (2.7)</td>
</tr>
<tr>
<td>Median (range)</td>
<td>29 (26-37)</td>
<td>28 (24-46)</td>
<td></td>
<td>29 (24-46)</td>
</tr>
<tr>
<td>PGY</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>62 (37.8)</td>
<td>43 (33.6)</td>
<td></td>
<td>105 (36.0)</td>
</tr>
<tr>
<td>2</td>
<td>50 (30.5)</td>
<td>42 (32.8)</td>
<td>.46§</td>
<td>92 (31.5)</td>
</tr>
<tr>
<td>3-4‡</td>
<td>52 (31.7)</td>
<td>43 (33.6)</td>
<td></td>
<td>95 (32.5)</td>
</tr>
</tbody>
</table>

Abbreviations: BWH, Brigham and Women’s Hospital; PGY, postgraduate year.

*Unless otherwise noted, data are reported as number (percentage) of subjects.
†Results of the \( \chi^2 \) or \( t \) test for comparison between the BWH and Duke samples.
‡Dichotomized to white or nonwhite for comparison.
§Dichotomized to PGY 1 or PGY 2-4 for comparison.

Five residents from BWH and 7 residents from Duke were PGY 4 (eg, combined medicine-pediatrics residency).

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Residents were twice as likely to address preferences for CPR (70.5%) as health care proxy (33.7%) or goals and values related to the end of life (32.0%) (Table 2). Residents reported that they asked only 35.6% of admitted patients if they had an advance directive. Subgroup analysis revealed that residents at Duke were significantly more likely than residents at BWH to address all advance care planning topics except health care proxy. The frequency of advance care planning topic discussed did not otherwise vary significantly by age, sex, or PGY.

### BEHAVIORS

When residents were asked what advance care planning topic patients think is important to address on the day of admission, the highest percentage said goals and values related to the end of life (n=136; 46.6%). Yet they identified a number of reasons why they tend not to discuss goals and values related to the end of life, including time pressures (n=248; 84.9%) and the belief that they should know their patients better first (n=183; 62.7%). Two hundred sixty-four residents (90.4%) felt that the need to document code status made them more likely to address preferences for CPR than other advance care planning topics. Residents believed that their peers (n=272; 93.2%) and superiors (n=273; 93.5%) felt that it was important to discuss preferences for CPR on the day of admission. In comparison, residents were much less likely to think that either their peers (n=61; 21.0%) or superiors (n=79; 27.1%) believed it important to address goals and values on the day of admission. Two hundred seventy-four residents (93.8%) stated that they would feel irresponsible if they did not address preferences for CPR. Only 18.2% of residents (n=53) felt that patients have a meaningful understanding of discussions about CPR. One hundred thirty-nine residents (47.6%) were uncertain how to document a patient’s goals and values related to the end of life.

### PREPARATION

Table 3 outlines resident preparation for advance care planning, including teaching, modeling, and feedback. Although pooled data revealed that 66.4% of residents had received teaching on admitting-day advance care planning discussions, only 51.8% of residents at BWH vs 85.1% of residents at Duke had received teaching about advance care planning (P<.001). A large majority of residents (89%) at both institutions had witnessed an attending physician or more advanced resident model advance care planning on the day of admission. On the other hand, only 36.6% of all residents received feedback about advance care planning conversations. A total of 122 residents (41.8%) reported that they did not know how to address goals and values related to the end of life well. Residents reported that they would benefit from additional training about discussing goals and values related to the end of life (n=231; 79.1%), preferences for CPR (n=124; 42.6%), and health care proxy (n=146; 50.0%).

### ATTITUDES AND BELIEFS

Table 2. Frequency of Advance Care Planning Conversations on the Day of Admission by Topic*

<table>
<thead>
<tr>
<th>Advance Care Planning Topics</th>
<th>BWH (n = 7.4)</th>
<th>Duke (n = 5.8)</th>
<th>P Value†</th>
<th>Total (n = 6.7)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Health care proxy</td>
<td>2.4 (32.4)</td>
<td>1.9 (33.0)</td>
<td>.87</td>
<td>2.2 (33.7)</td>
</tr>
<tr>
<td>Preferences for cardiopulmonary resuscitation</td>
<td>4.9 (66.0)</td>
<td>4.5 (76.4)</td>
<td>.005</td>
<td>4.7 (70.5)</td>
</tr>
<tr>
<td>Goals and values related to the end of life</td>
<td>2.0 (26.5)</td>
<td>2.2 (39.1)</td>
<td>.002</td>
<td>2.1 (32.0)</td>
</tr>
<tr>
<td>If the patient had an established advance directive</td>
<td>2.1 (27.4)</td>
<td>2.7 (46.1)</td>
<td>&lt;.001</td>
<td>2.4 (35.6)</td>
</tr>
</tbody>
</table>

Abbreviations: BWH, Brigham and Women’s Hospital; n, average number of patients admitted.

*Unless otherwise indicated, data are expressed as the mean number or “frequency” (percentage) of patients with whom residents addressed a particular topic. Percentages are expressed as the frequency divided by n. Residents sometimes addressed more than 1 topic per patient, and so percentages may add up to more than 100%.

†Using the t test.

Table 3. Preparation for Advance Care Planning by Site*

<table>
<thead>
<tr>
<th>Method</th>
<th>BWH (n = 164)</th>
<th>Duke (n = 128)</th>
<th>P Value†</th>
<th>Total (n = 292)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Teaching</td>
<td>85 (51.8)</td>
<td>109 (85.1)</td>
<td>&lt;.001</td>
<td>194 (66.4)</td>
</tr>
<tr>
<td>Modeling</td>
<td>137 (83.5)</td>
<td>123 (96.1)</td>
<td>&lt;.001</td>
<td>260 (89.0)</td>
</tr>
<tr>
<td>Feedback</td>
<td>56 (34.1)</td>
<td>51 (39.8)</td>
<td>.32</td>
<td>107 (36.6)</td>
</tr>
</tbody>
</table>

Abbreviation: BWH, Brigham and Women’s Hospital.

*Unless otherwise indicated, data are reported as number (percentage) of subjects.

†Using the t test.
Table 4. Associations Between Resident Preparation and Percentage of Patients With Whom Residents Address Advance Care Planning Topics*

<table>
<thead>
<tr>
<th>ACP Topic Addressed With Patient</th>
<th>Method of Resident Preparation</th>
<th>( P )</th>
<th>( P )</th>
<th>( P )</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Teaching</td>
<td>Modeling</td>
<td>Feedback</td>
<td></td>
</tr>
<tr>
<td>Health care proxy</td>
<td>Yes 36.1</td>
<td>28.9</td>
<td>.08</td>
<td>34.6</td>
</tr>
<tr>
<td>Preferences for cardiopulmonary resuscitation</td>
<td>Yes 70.2</td>
<td>66.7</td>
<td>.25</td>
<td>71.5</td>
</tr>
<tr>
<td>Goals and values related to the end of life</td>
<td>Yes 32.9</td>
<td>30.3</td>
<td>.55</td>
<td>33.0</td>
</tr>
</tbody>
</table>

Abbreviation: ACP, advance care planning.

*Adjusted for age, postgraduate year, race, sex, and site (Duke or Brigham and Women’s Hospital). Health care proxy is not adjusted for site because there was no statistical difference between the 2 sites for this variable.
†Statistically significant, \( P < .05 \).

**PREDICTION OF RESIDENT APPROACHES TO ADVANCE CARE PLANNING**

Multivariate regression analysis revealed that residents who had received feedback about advance care planning conversations were more likely to establish a patient’s health care proxy and discuss goals and values on the day of admission (Table 4), adjusting for age, PGY, race, sex, and site. Residents who had received feedback established a health care proxy with 41.8% of patients vs 29.4% of patients among residents who had not received feedback (\( P = .002 \)). Similarly, the percentage of patients who were asked about goals and values related to the end of life was 37.2% among residents who had received feedback, whereas it was only 26.1% among residents who had not received feedback (\( P = .006 \)). Although there were higher percentages of advance care planning conversations among residents who had received teaching and modeling than among those who did not, these differences did not achieve statistical significance (Table 4).

**OPEN-ENDED RESPONSES**

Residents were asked to describe experiences in which they felt uncomfortable, conflicted, or troubled about an advance care planning conversation on the day of admission. Multiple residents described a potential harm of discussing preferences for CPR with patients who are not in danger of cardiopulmonary arrest. A few of these residents expressed concern that their assumptions might lead them to perform CPR on a patient against his or her wishes.

**COMMENT**

Our multiple-site survey found that residents addressed preferences for CPR with 70.5% of patients on admis-
sion and were twice as likely to address this topic as any other advance care planning topic. We found that many residents are inadequately prepared to discuss advance care planning with patients when they are admitted to the hospital. Although many residents had seen advance care planning modeled, only 66.4% of residents had received teaching about advance care planning. Furthermore, only 36.6% had received feedback about an advance care planning conversation, similar to the 33.0% of residents who had received feedback in a national study. Multivariate analysis revealed that feedback was the mode of preparation most likely to be associated with discussions about health care proxy and goals and values related to the end of life.

Duke residents discussed preferences for CPR and goals and values related to the end of life with a significantly higher proportion of patients than residents from BWH. Furthermore, a significantly higher proportion of residents at Duke had received teaching and modeling about advance care planning. Rates of feedback were similarly low between the 2 sites. Differences in rates of advance care planning between Duke and BWH may be owing to differences in teaching and modeling, although the trend toward an association between these teaching methods and resident approaches to advance care planning did not achieve statistical significance in our study.

Our study affirms the findings of previous studies of resident advance care planning conversations, although no previous study, to our knowledge, looks specifically at resident behavior on the day of admission. Previous studies reported that residents had little training or supervision in advance care planning discussions and described major deficiencies in these conversations. Our study builds on these data, describing the pressures and resident approaches to advance care planning did not achieve statistical significance in our study.

Residents are concerned that patients may not have a meaningful understanding of discussions about CPR, a concern supported by the literature. Residents describe a tension between the need to document preferences for CPR and the difficulty of having such a conversation with an unknown patient on a busy admitting night. For relatively healthy patients, residents suggest that a discussion about CPR on the day of admission may be shocking, increasing patient anxiety and threatening the patient-physician therapeutic alliance. When residents inquire about preferences for CPR when cardiopulmonary arrest is not within the patient’s own view of his or her illness trajectory, residents are concerned that patients wonder if the physician is withholding prognostic information. Further research into the patient experience of advance care planning conversations on admission should explore the relationship between these conversations and patient anxiety.

Multiple teaching methods have been devised to improve the quality of advance care planning conversations at both the attending physician and resident level. These methods propose that advance care planning conversations begin with open-ended questions about a patient’s goals and values. These conversations are time-consuming, and as 84.9% of residents in our study note, time pressures are a barrier to having goals and values discussions on the day of admission. In the absence of a major restructuring of admitting practices to create more time for admitting patients, conversations about goals and values cannot realistically be performed with all patients on admission.

Perhaps the pressure to address preferences for CPR on the day of admission should be called into question. As residents in our study note, advance care planning conversations are best had with primary care providers prior to hospital admission. Unless patients are gravely ill, the potential harm of a rushed conversation about preferences for CPR, which may lead to uninformed or misunderstood choices, may outweigh the potential benefit. Hospitals could develop a triage system for approaching advance care planning on the day of admission based on the severity of patient illness. Policies that require documentation of preferences for CPR in the outpatient setting for seriously or chronically ill patients may encourage primary care providers to have these conversations prior to admission. Educational initiatives for residents should emphasize training in goals and values discussions, so the outpatient primary care providers of the future have the skills necessary to conduct these complex conversations.

Our study had several strengths. First, the 2 institutions in the study represented separate parts of the country (the northeast and the south) with different cultures. Second, the composition of the resident sample in our study by PGY was similar to the national average. Third, the responses to questions about preparation for advance care planning in this study are similar to findings of a previous large-scale national survey, and our findings confirm previous research that residents focus on preferences for CPR during advance care planning conversations. Limitations of our study are also noted. Although there were statistically significant differences in age between the samples from the 2 institutions, there were no significant differences in the frequency of advance care planning by age. Recall and social desirability bias may have affected residents’ reports of advance care planning conversations.

The day of admission to the hospital is a critical time for the patient-physician relationship. Patients may be afraid of being hospitalized, leaving them emotionally vulnerable. Some patients are gravely ill. Many physicians are meeting patients for the first time. Questions about preferences for CPR may be shocking to relatively healthy patients when asked on the day of admission. This discomfort may threaten the early stages of a therapeutic alliance. For more critically ill patients, taking time to address all aspects of advance care planning on the day of admission seems appropriate. Attempting to compress a difficult conversation about preferences for CPR into a busy and stressful day of admission with a previously unknown, vulnerable, and ill patient is a daunting task for resident physicians. Residents are concerned that for some patients, these conversations may be more harmful than helpful, a hypothesis that requires further exploration. Future interventions designed to change resident behavior should emphasize feedback, a critical component of the learning process that in our study was associated with differences in resident approaches to advance care planning.
Accepted for Publication: May 17, 2006.
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Author Contributions: Dr Smith had full access to all of the data in the study and takes responsibility for the integrity of the data and the accuracy of the data analysis.
Financial Disclosure: None reported.

REFERENCES