

# *Advance Care Planning in a Frail Older Population*

## *Patient Versus Program Influences*

HELENA TEMKIN-GREENER

DIANE L. GROSS

*University of Rochester School of Medicine & Dentistry*

DANA B. MUKAMEL

*University of California, Irvine*

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This study examines the process of advance care planning in managed care programs serving the frail elderly and assesses the contributions of individual versus program characteristics on choices made. Data about 3,548 participants in nine programs were obtained. Logistic regressions examine associations between independent variables and end-of-life treatment choices. Interviews with the programs' medical directors augment quantitative analysis. When all of the known participant characteristics are accounted for, substantial amount of variation attributable to the program-indicator variable remains. Program effect explains 36% of the variation in do-not-resuscitate choice, 66% in the choice of artificial feeding, and 50% relating to the presence of health care proxy. The variation in treatment choices attributable to the program of enrollment and the interviews with the medical directors suggest that provider practice styles are important in determining patients' choices at the end of life. Interventions to enhance advance care planning should target providers of care.

**Keywords:** *advance directives; end of life; PACE; managed care; long-term care*

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*Discussions about advance directives (ADs) are considered to be an important component of medical care, particularly in programs serving the elderly. An AD provides a description of personal preferences for future life saving or sustaining treatments, should one become*

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incapacitated and unable to express those preferences at some later point in time. Typically, an AD may identify someone (e.g., health care proxy) who will speak on behalf of the patient. Alternatively, or in addition, a directive may specify treatments (e.g., cardiopulmonary resuscitation, feeding tubes) that would, or would not, be preferred in particular situations.

The Patient Self-Determination Act (PSDA) was enacted in the United States more than a decade ago to promote patients' autonomy and advance care planning. To date, the PSDA appears to have had only a modest impact on the rate of completion of ADs (General Accounting Office 1995; Miles, Koeppe, and Webber 1996; Sachs, Stocking, and Miles 1992) or in assuring that treatment is consistent with those directives (Danis, Southerland, and Garrett 1991; Teno 1998; Teno et al. 1997). The reasons for this have been attributed both to patients' characteristics and preferences (Gleeson and Wise 1990; Gordon and Shade 1999) as well as to practice styles of the medical providers (Teno et al. 1997; Prendergast 2001). For example, studies have shown that patients' ethnicity or culture-group affiliation is strongly associated with the attitudes and wishes for the use of life support (Blackhall et al. 1999; Bowman and Singer 2001; Carmel 2003; Crawley et al. 2000) or even with the willingness to engage in advance care planning (Bowman and Singer 2001). In addition, end-of-life treatment decisions made by patients may be strongly influenced by the expressed preferences of their family members (Blackhall et al. 1999). Furthermore, studies have documented that physicians' comfort in discussing end-of-life treatment decisions (Curtis et al. 2000) as well as personal characteristics such as age, race, and gender (Mebane et al. 1999) influence their attitudes toward advance care planning.

The literature on practice style variations offers further evidence that utilization of health services at the end of life varies more with geography than with patient characteristics (Birkmeyer et al. 1998;

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Mukamel, Bajorska, and Temkin-Greene 2002; Temkin-Greener and Mukamel 2002; Wennberg et al. 1989). The existence of such variations in the context of advance care planning would suggest that end-of-life treatment choices may be more influenced by medical practice styles than by individuals' preferences. This raises important ethical questions about our medical care system's responsiveness to patients' wishes and its ability to support their autonomy.

This study tests the hypothesis that choices with regard to end-of-life treatments and health care proxies, made by patients enrolled in the Program of All-Inclusive Care for the Elderly (PACE), depend mostly on who they are, rather than in which program they are enrolled. We test this hypothesis by examining the contribution of personal patient characteristics, compared to the program in which the patient is enrolled, to the explanation of the variation in end-of-life choices these patients have made.

This study extends previous research in several ways. Prior studies have suggested that successful implementation of advance care planning requires improved patient-physician communication about end-of-life care, treatment of advance care planning as an ongoing process rather than a point-in-time event, shifting the locus of such planning from hospitals to the community, and facilitating discussion about values and preferences (Curtis et al. 2000; Hammes and Rooney 1998; Prendergast 2001; Teno 1998). PACE contains all of these elements (Lynn 2002). It therefore provides an excellent laboratory for exploring issues related to advance care planning, and in particular for investigating the relationship between provider practice style and patients' wishes. Furthermore, unlike other studies, which have focused on either patient or provider characteristics in explaining choices of advance directives, this study examines the relative importance of both. We present statistical evidence about factors that influence advance care planning in PACE and, based on interviews we conducted with medical directors of these programs, we offer insights as to the potential reasons for our findings. We conclude by suggesting areas for further research and improvements in advance care planning.

*The PACE Model and Advance Care Planning: A Test Case*

PACE is a community-based alternative care setting for the frail, chronically ill elderly whose significant functional and cognitive impairments make them eligible for nursing home care, but who choose to stay in their own homes (Bodenheimer 2002). Today, there are more than 30 PACE programs across the country providing a continuum of capitated, managed care consisting of preventive, primary, acute, rehabilitative, and long-term care services to their participants. On average, PACE programs have a ratio of one physician and one nurse practitioners per 150 enrollees (National Pace Association 2002), thus assuring the participants of a close and ongoing relationship with their primary care providers and with other program staff. Most PACE enrollees remain in the program until death. Therefore, end-of-life care and planning for it are important components in these programs (Eng 2002).

Each PACE site must comply with the existing federal and state PSDA laws, but there is no PACE-wide policy that explicitly directs these programs to conduct advance care planning. Prior to the passage of the Balanced Budget Act of 1997, PACE was a demonstration program, and sites were not required to have specific written policies and procedures for advance care planning. Although this has changed as PACE programs transitioned from a demonstration to a Medicare provider status, there are no uniform requirements as to what types of advance directives the sites should collect or how to elicit this information from the participants. Nevertheless, all PACE programs include discussions about advance directives often beginning with the intake process. Prior studies of PACE show very high rates of advance directives completion (between 80% to 90%) by program participants (Eleazer et al. 1996; Lee et al. 2000). The subject of advance care planning is first generally brought up at admission or at first physical assessment conducted by a physician and/or a nurse practitioner. When a participant has been determined not to have the capacity to make medical decisions, a legal guardian is sought to address both legal and medical issues. Advance directives are generally reevaluated at an annual reassessment or anytime following stroke, heart attack, hospitalization, or other sentinel health events.

This emphasis on advance care planning, the fact that it is incorporated into usual care practice, combined with the close relationships between care providers (physicians, nurses, and social workers), the patients and their families, all make for an environment that should encourage addressing sensitive issues about end-of-life treatment options and making difficult choices about the use of critical care technology that can extend life or extend the process of dying.

### *Data and Method*

#### *SAMPLE*

The population in this study included the participants of nine PACE sites serving a total of 4,312 people between June 1990 (inception date for the earliest sites) and June 1998. By June 1998, there were 12 PACE programs in operation across the United States. Recorded advance directives were available for 3,743 of those enrollees (87%). These advance directives record the participants' choices with regard to end-of-life treatments and health care proxies. Individuals may choose or refuse such future treatments as cardiopulmonary resuscitation or feeding tubes. If they are not willing to make these choices, default treatment options (i.e., resuscitation and feeding tubes) will be recorded at that time. In addition, the participants have an option of naming a health care proxy.

One hundred ninety-five participant records were excluded because of missing values for one or more variable other than advance directives, resulting in the final analytic sample of 3,548 person-specific records. The nine participating PACE sites—Oakland, California; Sacramento, California; Denver, Colorado; East Boston, Massachusetts; Detroit, Michigan; Rochester, New York; Columbia, South Carolina; Milwaukee, Wisconsin; and El Paso, Texas—represent a majority of the original 12 PACE sites, all of which were fully capitated for Medicare and Medicaid by mid-1997. We limited the study to these original PACE programs to ensure that programs had enough time to develop and implement their advance care planning practices and because newer programs had very small enrollments.

*QUANTITATIVE DATA*

We used two sources of quantitative data: (1) dataPACE, a secondary source collected under contract with the Centers for Medicare and Medicaid Services (no. 500-95-0035) through mid-1998), and (2) advance directives, a primary data source. DataPACE is a comprehensive, administrative database containing demographic, health, functional status, medical history, and service use information on a person-specific, longitudinal basis. Assessments of dataPACE quality have been reported elsewhere (Mukamel, Temkin-Greener, and Clark 1998; Temkin-Greener, Meiner, and Gruenberg 2001; Temkin-Greener and Mukamel 2002).

All PACE sites seek to obtain advance directives regarding cardiopulmonary resuscitation (CPR) and health care proxies, and all but one regarding artificial feeding. Most typically, a health care proxy is a family member or someone else designated by the program participant to make medical decisions when the participant becomes unable to make them. Artificial feeding refers to methods used to feed people who can no longer eat, such as inserting a tube into the stomach or giving liquid nutrients through a vein catheter (Pace and Glass 2000).

At each site, advance directive records were retrieved from patients' medical files by designated program staff. Information on the last (for decedents) or the most recent (for survivors) advance directives, together with the site-generated patient identification numbers, were forwarded to the authors where the data were computerized, edited for accuracy, and linked with dataPACE for each participant, using a patient-specific identification number generated by each site.

*OUTCOME VARIABLES*

The analytic sample includes only those participants who had recorded, written advance directives. Analyses regarding CPR orders and health care proxies involve all nine sites and 3,548 participant records. Analyses of artificial feeding include eight sites and 3,221 records.

Three dichotomous variables were created, indicating a treatment preference recorded in the participant's chart for each of the three

options, respectively. The CPR status was coded 1 if the do-not-resuscitate (DNR) code was selected by the program participant (or legal proxy when an individual lacks capability) or 0 if any form of life support (full code, basic life support, conditional life support, etc.) was chosen. Similarly, a code of 1 for the tube-feeding variable indicates a specific wish not to have this treatment, whereas 0 indicates to the contrary. The variable for health proxy was coded 1 if the patient had a proxy, or a medical durable power of attorney or a guardian, and 0 otherwise. When a participant is unwilling to choose a specific treatment option, the programs assign default values, that is, CPR and artificial feeding.

#### *INDEPENDENT VARIABLES*

An extensive literature review served as a guide in identifying those personal characteristics that are likely to affect the decision making process concerning the choice of treatments at the end-of-life. Following the behavioral model developed and modified by Andersen and Newman (1973), independent variables were categorized as predisposing, enabling, or need characteristics. Predisposing variables include age, gender, ethnicity, and level of education attained. Enabling variables include living arrangements, marital status, presence of living children, presence of informal caregivers (i.e., spouse, child, other relative or friend living in the same household or elsewhere), and length of time in the program. Need variables include self-reported health status, functional status, cognitive status, incontinence, need for skilled care, and selected medical diagnoses. Functional status is assessed using an index of activities of daily living (ADLs), which in dataPACE include bathing, dressing, grooming, toileting, transfer, walking, and feeding. For each ADL, participants are scored as either dependent (partially or totally) or independent. Cognitive status is measured by the Short Portable Mental Status Questionnaire (SPMSQ), an instrument that has been validated in other studies (Pfeiffer 1975).

Also included is a variable indicating the PACE site where the participant is enrolled. This variable allows us to assess the effect of site on the presence or absence of each type of advance directive. The site variable captures primarily local practice styles and perhaps the availability of local resources.

*STATISTICAL ANALYSES*

The associations between the independent variables and end-of-life treatment choices were assessed using logistic regressions, which are particularly suitable for binary response variables. The model for DNR predicts the presence of DNR orders, the model for proxy predicts the presence of health proxies, and the model for tube-feeding treatment predicts the refusal of such treatment. Each regression model includes the same set of independent variables. We performed diagnostic tests for collinearity among all independent variables and detected no evidence of significant effects that may inflate standard errors.

Because the decision-making process concerning the use of advance directives requires a certain degree of cognitive ability, severe cognitive impairment could harm the reliability of such decisions. Therefore, we reestimated all three models on a subset of the sample consisting only of people who made fewer than five mistakes on SPMSQ (i.e., those who may be thought of as being cognitively capable to make meaningful decisions regarding the use of advance directives). For the most part, the results from the full sample and the cognitively intact sample were similar, and therefore, only the former are presented in this article.

To assess the impact of participant versus PACE site characteristics in making advance directive choices, we computed a pseudo  $R^2$  for a model with individual characteristics only and for a model that includes both the individual and site variables. We used the SAS-Macro written by Mittlbock and Schemper (1999) to compute this pseudo  $R^2$ , which can be used and interpreted in a fashion analogous to measures of variation in an ordinary least squares regression. The pseudo  $R^2$  can be interpreted as the percentage of the variation that is explained by the independent variables included in the model. By comparing the pseudo  $R^2$  in the two models, we can evaluate the incremental contribution of the site to explaining variation, after individual characteristics have been taken into account.

*QUALITATIVE ANALYSES*

The statistical models help to identify the existence of significant site effects, but the small number of sites available for this study makes it impossible to conduct a systematic statistical analysis of site

characteristics. Therefore, to gain insight into the significant site effects we observed in the statistical analysis, we conducted personal interviews with the medical directors (MDs) of the nine participating sites. All of the MDs we interviewed were involved in both clinical and administrative duties. We chose to interview the MDs because they are key in setting and implementing the philosophy of care and the practice style of each program.

We used a semistructured instrument composed of 16 open-ended questions to assist us in guiding the interviews. The survey instrument dealt with three core categories of issues: (1) process of eliciting advance directives, (2) patients' understanding of the issues and their families' involvement, and (3) staff training and comfort level regarding advance directives' discussions. We pretested the interview instrument with a former MD of a PACE program. All interviews were conducted by one of the coauthors either by phone or in-person and generally lasted 30 to 45 minutes. All interviews were tape-recorded with the permission of the interviewees and subsequently transcribed. Two of the authors reviewed all of the tape-recorded interviews independently of each other, using a method sometimes referred to as "constant comparisons," which breaks the textual data into incidents or ideas. These units were then compared with each other within each interview and across the experience of the different interviewees. We then organized these ideas according to the three above-mentioned core categories.

### *Results*

Table 1 provides a summary of selected characteristics for the PACE participants and an indicator for end-of-life practice patterns in communities hosting these programs. Overall, 87% of PACE participants in our sample had recorded advance care directives. The rate of recorded directives varies from 67% in Site A to 100% in Site D. Although this variation reflects differential recording of ADs across the sites, it may also reflect differential reporting of data that are due, for example, to a site's inability to locate past records for deceased participants.

The average PACE participant in the sample is 80 years old, female, and Medicaid eligible. Although half of all participants are White, the

TABLE 1  
Descriptive Statistics by PACE Site: Through June 1998

PACE Program	PACE Program Characteristics <sup>a</sup>					Host Community Characteristics <sup>b</sup>				
	Number of Enrollees	Percentage With Advance Directives	Average Age	Percentage White	Percentage Medicaid	Average No. ADLs	Average No. Medical Conditions	Percentage in ICU for Terminal Hospital Stay	Percentage in ICU during 7+ Days in the Last 6 Months of Life	
All plans	4,312	87	80.0	51	95	3.0	8.1			
A	632	67	80.8	89	91	2.8	9.4	16	10	
B	767	83	77.8	24	99	3.5	7.6	20	15	
C	765	96	78.7	48	97	2.8	8.8	13	7	
D	330	100	78.9	5	100	3.1	9.1	24	21	
E	522	77	80.2	55	94	2.8	6.9	12	7	
F	729	92	80.4	79	89	3.5	9.2	15	8	
G	119	99	78.8	6	100	2.1	11.0	39	17	
H	302	98	78.4	63	88	3.1	9.1	32	11	
I	146	91	78.0	8	98	3.3	7.3	35	12	

NOTE: PACE = Program of All-Inclusive Care for the Elderly; ADLs = activities of daily living; ICU = intensive care unit.

a. Source: dataPACE. Statistics shown are for the time period 6/90-6/98.

b. Source: Wemberg (1999).

proportion varies from 5% in Site D to 89% in Site A. On average, PACE participants have three ADL impairments and 8.1 comorbid conditions.

Considerable variation also exists in end-of-life practice patterns, in the communities hosting these PACE sites, expressed by the use of intensive care units (ICUs) for terminal care. All subsequent analyses are conducted only on those participants with recorded advance directives.

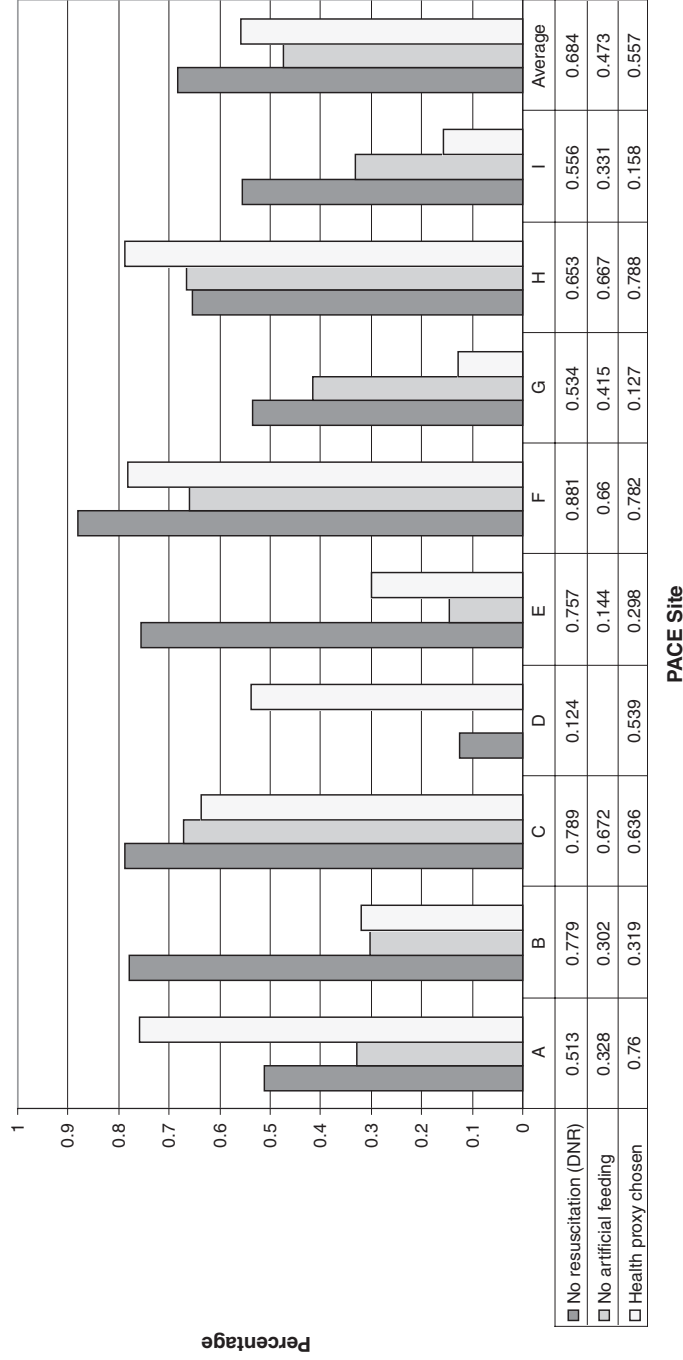
Figure 1 shows the distribution of treatment and health care proxy choices made by participants with advance directives within each PACE site. The average rate for health care proxy completion is 55.7% with a low of 12.7% in Site G and a high of 78.8% in Site H. Overall, 68.4% of PACE participants have a recorded DNR, but there is substantial variation among the sites, with a low of 12.4% in Site D and a high of 88.1% in Site F. Forty-seven percent of the participants do not want artificial feeding, ranging from 14.4% refusal rate in Site E to 67.2% in Site C. Artificial feeding is not recorded in Site D.

As expected, the choices that the participants make with respect to each advance directive type are not unrelated. Those who do not refuse artificial feeding are less likely than those who do to select a DNR code ( $p < .0001$ ) or to have a health care proxy ( $p < .0001$ ). Those who select a health care proxy are more likely to select DNR, but that relationship is very weak and not statistically significant ( $p < .2672$ ).

In Table 2, we identify the dependent and the independent variables used in the analyses and present their mean values. Tables 3, 4, and 5 show the results of the multivariate analyses. Both participant-specific characteristics and PACE-site variables are included in all of the estimated models, but for the ease of presentation, their impact on end-of-life treatment choices is presented separately. The C statistics and the Hosmer and Lemeshow goodness-of-fit tests indicate good fit of the models for each treatment option.

#### *PARTICIPANT-SPECIFIC CHARACTERISTICS AND ADVANCE DIRECTIVES*

The impact of participant-specific characteristics, controlling for the PACE site indicator, on presence of health care proxy is presented in Table 3. Three predisposing variables are significantly predictive of



**Figure 1: Distribution of End-of-Life Treatment Choices and of Health Care Proxy: By PACE Site**  
 NOTE: PACE = Program of All-Inclusive Care for the Elderly.

TABLE 2  
Risk Factors Included in the Analysis (in percentages)

<i>Variables</i>	<i>Mean</i>
Dependent variables	
DNR (= 1)	68.4
Proxy (= 1)	55.7
Tube feeding (= 1)	47.3
Independent variables	
Site	
A	10.6
B	15.9
C	20.2
D	9.2
E	10.8
F	18.9
G	3.1
H	8.1
I	3.2
Length of stay (in months)	36.2
Age	
Younger than 75	32.1
75 to 85	44.0
Older than 85	23.9
Female gender	72.7
Ethnicity	
White	51.4
Black	33.3
Hispanic	13.4
Asian	0.8
American Indian or other	1.1
Marital status	
Married	17.4
Widowed	57.5
Other	25.1
Years of education	8.5
Living arrangements	
Home alone	27.2
Home with spouse	8.3
Home with other relatives	31.1
Nursing home	15.3
Other	18.1
Presence of living children	78.2
Presence of household caregiver	42.2
Presence of nonhousehold caregiver	58.9

(continued)

TABLE 2 (continued)

<i>Variables</i>	<i>Mean</i>
Self-reported health	
Excellent or good	41.3
Fair or poor	33.9
Not answered	24.8
ADL—bathing	89.5
ADL—dressing	81.3
ADL—grooming	85.3
ADL—toileting	65.4
ADL—transfer	60.7
ADL—walking	61.6
ADL—feeding	49.2
IADL—managing money	91.1
IADL—taking medications	92.3
< 5 errors in SPMSQ	57.9
Vision impairment	47.1
Bladder incontinence	71.3
Bowel incontinence	45.1
Cancer	14.6
Renal insufficiency	16.2
Parenteral medications	17.6
Daily suctioning	0.6
Daily oxygen	8.1
Dialysis	1.9

NOTE: DNR = do not resuscitate; ADL = activity of daily living; IADL = instrumental activity of daily living; SPMSQ = Short Portable Mental Status Questionnaire.

the presence of health care proxy. Participants with longer than the average length of program enrollment are 18% more likely to have a recorded health care proxy than those with shorter lengths of stay. Black participants have a significantly ( $p < .0001$ ) lower probability of having a health care proxy (odds ratio [OR] = 0.62) compared with White enrollees. We also observe a small (OR = 1.04) but a statistically significant ( $p < .0001$ ) relationship between education and presence of health care proxy. In addition, two need variables are predictive of a health care proxy—inability to manage money (instrumental activity of daily living, or IADL) and SPMSQ score. Those with the IADL limitation and with SPMSQ scores greater than 5 are significantly more likely to have a designated health care proxy. Because both of these variables are indicative of a diminished cognitive capacity, this finding is consistent with the programs' general policy of

TABLE 3  
 Impact of Patient-Specific Characteristics, Controlling for PACE Site,  
 on Having a Recorded Health Care Proxy: Odds Ratios and  
*p* Values From Logistic Regression Analyses

<i>Independent Variables</i>	<i>Presence of Proxy</i> ( <i>N</i> = 3,548)	
	<i>Odds Ratio</i>	<i>Chi-Square Probability</i> <sup>a</sup>
Length of stay (48 months vs. mean)	1.18	.0001
Age		
Younger than 75	0.85	
75 to 85	0.93	
Older than 85 <sup>b</sup>		
Female gender	1.07	
Ethnicity		
White <sup>b</sup>		
Black	0.62	.0001
Hispanic	0.85	
Asian	0.73	
American Indian or other	1.06	
Marital status		
Married	0.89	
Widowed	1.03	
Other <sup>b</sup>		
Years of education	1.04	.0001
Living arrangements		
Home alone	0.99	
Home with spouse	1.08	
Home with other relatives	0.92	
Nursing home	0.83	
Other <sup>b</sup>		
Presence of living children	1.02	
Presence of household caregiver	1.06	
Presence of nonhousehold caregiver	1.06	
Self-reported health		
Excellent or good <sup>b</sup>		
Fair or poor	0.94	
ADL—bathing	0.87	
ADL—dressing	1.06	
ADL—grooming	1.17	
ADL—toileting	1.00	
ADL—transfer	0.84	
ADL—walking	1.14	
ADL—feeding	0.88	
IADL—managing money	1.39	.0282
IADL—taking medications	1.00	

(continued)

TABLE 3 (continued)

<i>Independent Variables</i>	<i>Presence of Proxy</i> (N = 3,548)	
	<i>Odds Ratio</i>	<i>Chi-Square Probability<sup>a</sup></i>
< 5 errors in SPMSQ	0.78	.0096
Vision impairment	0.89	
Bladder incontinence	1.03	
Bowel incontinence	1.06	
Cancer	1.13	
Renal insufficiency	0.97	
Parenteral medications	1.15	
Daily suctioning	0.60	
Daily oxygen	0.99	
Dialysis	0.79	
<i>C</i> statistic	0.774	
Hosmer-Lemeshow <i>p</i> value	.4194	

NOTE: PACE = Program of All-Inclusive Care for the Elderly; ADL = activity of daily living; IADL = instrumental activity of daily living; SPMSQ = Short Portable Mental Status Questionnaire.

a. *p* values greater than .1 are not displayed in the table.

b. Reference variable.

requiring someone to be named as an agent, both for legal and medical reasons, on behalf of those participants.

In Table 4, we present the results of the multivariate analyses with respect to the choice of DNR and feeding tubes. Participants who are Black or Asian are between 50% (OR = 0.50) and 66% (OR = 0.34) less likely than those who are White to have a DNR code. We observe a similar relationship with respect to refusal of artificial feeding. Younger participants are significantly less likely to have a recorded DNR code (OR = 0.35 for those younger than 75 years) compared with those who are age 85 or older. But age does not appear to be a significant predictor in refusing artificial feeding tubes. Gender is predictive of both DNR and tube feedings. Women are 26% more likely than men to have a recorded DNR code and are 30% more likely than men to refuse tube feeding.

Presence of children and of nonhousehold informal caregivers (not residing in the same household as the PACE participant) are both predictive of having a DNR code. Participants who have children are approximately 30% less likely to have a DNR code than those who are

TABLE 4  
 Impact of Patient-Specific Characteristics, Controlling for PACE Site,  
 on Choice of Advance Directives: Odds Ratios and  
*p* Values From Logistic Regression Analyses

<i>Independent Variables</i>	<i>Presence of DNR</i> (N = 3,548)		<i>Refusal of Tube Feeding</i> (N = 3,221)	
	<i>Odds Ratio</i>	<i>Chi-Square Probability<sup>a</sup></i>	<i>Odds Ratio</i>	<i>Chi-Square Probability<sup>a</sup></i>
Length of stay (48 months vs. mean)	1.11	.0001	1.06	.0070
Age				
Younger than 75	0.35	.0001	0.84	
75 to 85	0.55	.0001	1.05	
Older than 85 <sup>b</sup>				
Female gender	1.26	.0237	1.31	.0055
Ethnicity				
White <sup>b</sup>				
Black	0.50	.0001	0.44	.0001
Hispanic	0.74		0.70	.0813
Asian	0.34	.0095	0.40	.0304
American Indian or other	0.51	.0875	0.68	
Marital status				
Married	1.29		1.15	
Widowed	1.20		1.00	
Other <sup>b</sup>				
Years of education	1.02		1.00	
Living arrangements				
Home alone	0.92		1.13	
Home with spouse	0.87		0.98	
Home with other relatives	0.80		1.00	
Nursing home	1.24		1.01	
Other <sup>b</sup>				
Presence of living children	0.73	.0077	0.88	
Presence of household caregiver	1.03		0.88	
Presence of nonhousehold caregiver	1.18	.0077	1.18	.0651
Self-reported health				
Excellent or good <sup>b</sup>				
Fair or poor	1.22	.0502	0.88	
ADL—bathing	0.87		0.84	
ADL—dressing	0.81		0.84	
ADL—grooming	1.34	.0869	1.38	.0611
ADL—toileting	1.16		1.03	
ADL—transfer	1.00		0.95	
ADL—walking	1.25		1.23	
ADL—feeding	0.95		0.78	.0259

(continued)

TABLE 4 (continued)

<i>Independent Variables</i>	<i>Presence of DNR</i> (N = 3,548)		<i>Refusal of Tube Feeding</i> (N = 3,221)	
	<i>Odds Ratio</i>	<i>Chi-Square Probability<sup>a</sup></i>	<i>Odds Ratio</i>	<i>Chi-Square Probability<sup>a</sup></i>
IADL—managing money	0.97		0.99	
IADL—taking medications	1.31		1.00	
< 5 errors in SPMSQ	1.15		0.84	.0674
Vision impairment	0.97		0.90	
Bladder incontinence	1.32	.0144	0.91	
Bowel incontinence	1.16		1.11	
Cancer	1.20		1.25	.0535
Renal insufficiency	1.20		1.16	
Parenteral medications	0.90		0.87	
Daily suctioning	2.53		0.91	
Daily oxygen	1.43	.0461	0.96	
Dialysis	1.31		0.68	
C statistic	0.807		.756	
Hosmer-Lemeshow <i>p</i> value	.3081		.0560	

NOTE: PACE = Program of All-Inclusive Care for the Elderly; DNR = do not resuscitate; ADL = activity of daily living; IADL = instrumental activity of daily living; SPMSQ = Short Portable Mental Status Questionnaire.

a. *p* values greater than .1 are not displayed in the table.

b. Reference variable.

childless (OR = 0.73). On the other hand, having an informal caregiver who resides in a separate household confers a significantly higher relative risk (OR = 1.18) for having a DNR code than does the absence of such a caregiver.

Length of stay in PACE is one enabling variable that is consistently a statistically significant predictor of all the end-of-life choices made. For example, participants enrolled in the program for 48 months are 11% more likely than those who have a mean stay of three years to have a DNR code and 6% more likely to refuse tube feeding.

Of the many need variables included in the regression analyses, relatively few appear to be good predictors of the end-of-life treatment choices. Participants who report being in fair or poor health are more likely to have a DNR code (OR = 1.22) than those who report better health status. Bladder incontinence (OR = 1.32) and oxygen dependence (OR = 1.43) confer significantly higher relative risks for selecting the DNR code.

Participants needing assistance with feeding are significantly less likely to refuse tube feeding (OR = 0.78). There is also a borderline significant association between a low SPMSQ score and refusal of tube feeding. Participants who need assistance with grooming or those with a diagnosis of cancer are 38% and 25%, respectively, more likely to refuse artificial feeding than individuals without these conditions (statistically borderline significant association).

#### *PACE SITE CHARACTERISTICS AND ADVANCE DIRECTIVES*

*Program variations.* When all of the person-specific characteristics are controlled for, it becomes clear that the sites, where these participants are enrolled, are themselves important in predicting the choice of end-of-life treatments and the recording of health care proxies. In Table 5 we present, for each PACE site, the estimated probabilities of the presence of specific patient choices, both in absolute terms and relative to the probability for an average PACE participant.

Being enrolled in a specific site appears to have a statistically significant impact on the presence of health care proxies in seven of the nine PACE sites. Participants in Sites A, F, and H have greater than the average enrollee probability (58.0%) of having health care proxies; from 9.3% greater in Site A to 23.6% greater in Site H. On the other hand, participants in Sites B, E, G, and I have a significantly lower probability of health care proxies, compared with the probability for an average enrollee.

The overall predicted probability of having a DNR code is 72.4% for an average participant. The probabilities for participants enrolled in five (C, E, G, H, and I) of the nine sites are not significantly different from that for the average enrollee. Being a participant in Site A or D confers a significantly lower probability of having a DNR code—26.9% and 60.2%, respectively—compared to an average PACE enrollee. At the same time, participants in Sites B and F have 10.4% and 15.7% greater probability of having a recorded DNR code than the average enrollee ( $p < .05$ ).

Similarly, enrollment in PACE Sites C, F, and H appears to significantly increase the average probability of feeding tube refusal. On the other hand, being enrolled in Sites A and E significantly lowers—by as much as 26.6% to 36.0%—the probability of participants refusing to have a feeding tube installed.

TABLE 5  
Impact of PACE Site Characteristics on Advance Directives:  
Probabilities Estimated for the Average Enrollee  
Based on Logistic Models (in percentages)

	<i>Presence of Health Proxy</i> (N = 3,548)	<i>Presence of DNR</i> (N = 3,548)	<i>Tube Feeding Refusal</i> (N = 3,221)
Probability for average enrollee	58.0	72.4	47.4
Site A	67.3	45.5	20.7
Incremental effect relative to the average	9.3 <sup>a</sup>	-26.9 <sup>a</sup>	-26.6 <sup>a</sup>
Site B	41.2	82.8	37.1
Incremental effect relative to the average	-16.7 <sup>a</sup>	10.4 <sup>a</sup>	-10.3 <sup>b</sup>
Site C	65.0	82.0	64.6
Incremental effect relative to the average	7.0 <sup>b</sup>	9.6 <sup>b</sup>	17.2 <sup>a</sup>
Site D	58.2	12.2	
Incremental effect relative to the average	0.2 <sup>b</sup>	-60.2 <sup>a</sup>	
Site E	28.3	76.6	11.4
Incremental effect relative to the average	-29.7 <sup>a</sup>	4.2 <sup>b</sup>	-36.0 <sup>a</sup>
Site F	76.3	88.1	57.4
Incremental effect relative to the average	18.4 <sup>a</sup>	15.7 <sup>a</sup>	10.0 <sup>a</sup>
Site G	17.4	65.7	49.3
Incremental effect relative to the average	-40.6 <sup>a</sup>	-6.7 <sup>b</sup>	2.0 <sup>b</sup>
Site H	81.6	65.5	61.2
Incremental effect relative to the average	23.6 <sup>a</sup>	-6.9 <sup>b</sup>	13.9 <sup>a</sup>
Site I	19.0	72.7	40.3
Incremental effect relative to the average	-38.9 <sup>a</sup>	0.3 <sup>b</sup>	-7.1 <sup>b</sup>

a. Significant at  $p \leq .05$ .

b. Nonsignificant at  $p > .05$ .

NOTE: PACE = Program of All-Inclusive Care for the Elderly; DNR = do not resuscitate.

It is interesting to note that, for the most part, there does not seem to be any trend in site performance relative to specific treatment choices made, that is, sites with higher or lower than the average probability of DNR do not behave similarly with respect to feeding tubes or health care proxies.

If end-of-life treatment choices were determined solely by individual preferences and health status, all the systematic variation should be explained by the differences in participants' characteristics across sites. The results presented in Table 6 show that this is not the case. Together, personal and provider characteristics explain 28% of the variance in recorded DNR, whereas personal characteristics alone

TABLE 6  
 Impact of Participant and Program Site Characteristics  
 on Adjusted Pseudo  $R^2$ : Advance Directives Models

<i>Model</i>	<i>Participant Risk Only<sup>a</sup></i>	<i>Participant and Site Risks<sup>b</sup></i>	<i>Incremental <math>R^2</math> Due to Sites</i>
DNR	.18	.28	.10
Health care proxy	.11	.22	.11
Feeding tube	.06	.18	.12

NOTE: DNR = do not resuscitate.

a. Pseudo  $R^2$  for models including only participant factors.

b. Pseudo  $R^2$  for models including both participant risk factors and site indicator variables.

account for 18% of the variance. This suggests that 36% of the explanatory power of this regression model can be attributed to the provider site indicator alone. The importance of the site variable is also clear with regard to artificial feeding directive, where 66% of the explanatory power of the model may be attributed to the site ( $R^2 = 12\%$ ). In predicting the presence of a health care proxy, 50% of the explained variance ( $R^2 = 22\%$  for the total model) may be attributed to the site variable ( $R^2 = 11\%$  for the model without the site variable).

It is possible but not likely that other participant characteristics that may be correlated with the site, but are not explicitly included in the regression model, may also affect the site coefficients. Given the richness of the participant-level data available, it is unlikely that important participant risks are omitted. Therefore, the site variable in all probability reflects provider characteristics and practice patterns rather than patient characteristics. Prior research has shown that hospital deaths in PACE mirror, to a large degree, place of death practice patterns in the host communities, that is, the metropolitan areas where the PACE sites are located (Temkin-Greener and Mukamel 2002). Because population-level data on specific end-of-life treatment choices are not available, we decided to compare the variations in PACE to selected end-of-life indicators in the host communities, based on the Medicare program data from the Dartmouth Atlas (Wennberg 1999). To assess the relationship of advance directives' choices in PACE to practice patterns in host communities, we examined the correlation coefficients between the percentage of DNRs (and of feeding tube refusal) in PACE and the percentage of Medicare decedents in the host com-

munities who were admitted to intensive care units (ICUs) for terminal hospitalization and/or spent seven or more days in the ICU in the last six months of life. Only the correlation between the percentage of DNR in PACE and seven or more days in the ICU was significant ( $p < .011$ ). The negative correlation coefficient ( $-.788$ ) suggests that in the communities with a lower reliance on ICUs in the last months of life, PACE sites are more likely to exhibit a higher percentage of the DNR codes being selected.

#### *ADVANCE CARE PLANNING IN PACE*

Through personal interviews with the MDs, we are able to obtain additional insights into the process of advance care planning in PACE and into the program variations we observe. These findings are summarized in Figure 2. We first categorized each program according to its site-specific effect on its participants' preferences for end-of-life treatments (see the results reported in Table 5). The qualitative data were then summarized along the three core components of advance care planning that were addressed in the interviews.

*Eliciting ADs.* Although PACE programs share a common philosophy and a model of care delivery, there are no written protocols that are common to all programs with regard to advance care planning processes and procedures. One commonality across these programs is that they all engage in advance care planning with their participants shortly following enrollment and not later than within four months. The sites vary, however, as to when and under what circumstances advance care directives are reevaluated. According to one MD,

It's not always followed up very closely. Physicians tend to forget about that, and the social workers, they follow up but they don't follow up the way it should be. They will just say, "Did you decide about that?" "No, I didn't decide about that." That's the end of the discussion.

Another MD reported that "the goal is to revisit [advance directives] every year, but if there is no CPR and they're stable, there may not be a discussion. There is no schedule."

From the discussions with the MDs, it is quite clear that personalities and practice styles of individual physicians are important in deter-

Compared to Average Enrollee	PACE PROGRAM EFFECT ON PARTICIPANTS' PREFERENCES FOR END-OF-LIFE TREATMENTS									
	A	B	C	D	E	F	G	H	I	
DNR Code Selected	-	+	NS	-	NS	+	NS	NS	NS	
Feeding Tubes Refused	-	NS	+	+	+	+	NS	+	NS	
<b>Process of Eliciting Advance Directives</b>										
When are ADs first elicited?	Within 4 months of enrollment	Within 4 months of enrollment	Within 4 months of enrollment	Within 4 months of enrollment	Within 4 months of enrollment	Within 4 months of enrollment	Within 4 months of enrollment	Within 4 months of enrollment	Within 4 months of enrollment	Within 4 months of enrollment
When are ADs re-evaluated?	Following major health events	Annually for all or after major health events	Annually for all or after major health events	Every 6 months but not consistently for all	Annually for all or after major health events	Annually for all or after major health events	Annually for all or after major health events	Annually, but not consistently for all	Annually, but not consistently for all	Annually, but not consistently for all
Is there a standard format for AD process and procedures?	No	No	No	No	No	No	No	No	No	No
<b>Staff training, comfort level, professional philosophy</b>										
Is there in-program AD training for staff?	No	Some	Some	No	Some	Some	No	No	No	No
Are staff (physicians) comfortable with AD discussions?	Yes	Yes	Yes	Somewhat	Yes	Yes	Somewhat	Not clear	Somewhat	Somewhat
<b>Patients/families' understanding of issues</b>										
Do patients'/families understand pros and cons of specific ADs?	Varies	Yes	Yes	Varies	Yes	Yes	Yes	Varies	Varies	Varies
Are families involved in advance care planning?	Not routinely	Not routinely	Not routinely	Usually	Not routinely	Not routinely	Not routinely	Not routinely	Usually	Usually

**Figure 2: Summary of Discussions With PACE Medical Directors About Advance Care Planning**  
NOTE: + Enrollment in the site increases the probability of selecting DNR or refusing a feeding tube; - enrollment in the site decreases the probability of selecting DNR or refusing a feeding tube. PACE = Program of All-Inclusive Care for the Elderly; DNR = do not resuscitate; NS = not significantly different from the average;  
a. Cognitively intact patients.

mining how advance directives are elicited. One MD reported that social workers often chastise clinicians for “being more strict about revisiting advance directives of those who ask for more aggressive care and being more lax in revisiting those who ask for no intervention.” Another MD told us that if health care proxies are recorded, he or she is quite satisfied and not likely to be aggressive about eliciting participants’ wishes vis-à-vis CPR or artificial feeding. But another MD felt that “the majority of DNRs are very clear in what they want. Not to discuss this very early is to deny them appropriate care.”

*Staff training and comfort level.* Most physicians receive very cursory, if any, medical school training in either end-of-life discussions or in patient-interviewing techniques. All four of the MDs from the sites with low preference for life-saving treatments (B, C, E, F) report some in-service training vis-à-vis advance care planning in their sites. For the most part, this training takes on the form of “each one teach one,” with new physicians or nurse practitioners being present at a few advance care planning discussions conducted by the more experienced PACE physicians or an MD. MDs in the remaining five sites report no consistent, even informal, training for clinicians involved in advance care planning in PACE. According to one informant, “the thing that never happens . . . is to have someone watch you doing it and then give you feedback on it.”

Most MDs reported considerable variations in experience and comfort levels of their programs’ physicians and nurse practitioners (when involved) in discussing end-of-life treatments with patients. One informant suggested that

physicians have a much better comfort level than the NPs do as a whole, because . . . they have a better . . . comfort level about prognosticating . . . [and] the whole medical process. . . . On the other hand, there are some of our nurse practitioners who do a better job because they’re just better communicators. They’re better with the issue of dying, and we’ve had some physicians who really [were] very uncomfortable with people dying.

At least three of the MDs believed there is some level of discomfort among certain of their physicians with regard to end-of-life discussions. Interestingly, all four MDs from the sites with low preference for life-saving treatments believed that their physicians were very

comfortable: “They communicate very effectively in advance care discussions.” All informants reported sharing with their patients the available statistics about the effectiveness of life-saving and life-sustaining treatments for the very frail/disabled elderly. According to one informant:

As I discuss and give them options, most of the time the next question from the patient or the family will be, “What do you suggest?” Usually I try to avoid that . . . what I would choose for myself. . . . But then it’s a really hard discussion.

With a couple of such exceptions, however, most informants reported being comfortable sharing with their patients and the families what they would choose for themselves or for their family members in a similar situation.

*Patients and families.* When PACE participants are cognitively impaired and unable to make decisions, their family members or other legal guardians will make health care decisions, including those involving advance directives. For the cognitively intact participants, our informants were pretty evenly divided in thinking that they generally understand both the process and the content of advance care planning versus believing that both the participants and their family members have a poor or incomplete understanding of the medical realities of certain default (e.g., full code or feeding tubes) treatments. Of the nine MDs interviewed, four reported some degree of incomplete or poor understanding of the medical realities of these treatments among the participants, despite attempts to provide them and their families with information. One informant suggested that it is often difficult to undo the perceptions people bring with them, often from the popular culture, about miraculous medical treatments. “So much of it is [that] you see miracles all the time on television. I mean, everyone sees all the miracles. They see ER.” This MD also believed that the relative richness of the particular local health care environment is often responsible for the preconceptions held by the participants and their families.

We are in . . . a major . . . tertiary care center, and the [participants’] children come with the concept of . . . “it can happen here.” People may not feel that way [in other cities]. . . . You are in different environments of

consumer choice and perception of what you should get, or [should] not get, or must get. I think it's similar for life-saving care, as well.

Interestingly, the site represented by this MD is one where the participants are significantly less likely than the average to have DNR and to refuse feeding tubes (controlling for all other variables).

Several MDs reported that although participants may be comfortable and willing to discuss advance directives, they are often unwilling to put their wishes in writing, even if they understand that they may change these directives at any time. "Many people will not sign ADS [advance directives] because it's too concrete, it's like increasing the likelihood [that they will come true], but they're willing to discuss their wishes." Although all the informants felt it is important to educate, inform, and to some extent involve family members in advance care planning, only two MDs reported that including family members of the cognitively intact participants in the advance care planning process is the norm in their program.

They are big families. . . . And everyone has to agree on if they want DNR or not. There's only a few times that there's only one person making a decision. Most of the time three or four members of the family are involved. And it happens, too, that one may not be agreeing and three may be agreeing on obtaining the DNR.

### *Discussion*

This study explores the importance of patient and program characteristics on the choices with regard to advance directives in PACE. Contrary to our hypothesis, we find that patient-specific characteristics are not the only or in some cases even the principal determinants of the end-of-life treatment choices in PACE. There are systematic differences across PACE sites that transcend participant characteristics. At first glance, this may be surprising given the PACE programs' common delivery and financing models, a closely shared philosophy of care, and the emphasis on developing close relationships "among the participants, caregivers, and interdisciplinary team members," thus making "the program especially well suited to addressing end of life treatment options" (Eleazer et al. 1996). However, from our interviews with the MDs, it becomes quite apparent that although advance

care planning is emphasized in the PACE model, neither the content nor the process are standardized among the many PACE sites across the country. Although all PACE sites engage in advance care planning with their participants, there are no common protocols or standard formats with respect to such aspects of planning as when advance care planning should be executed; who approaches the participants; who is present during the end-of-life care discussions; what should be said by the health care professionals to the participants; what kind of education is provided to the participants and their families about end-of-life treatment options; and what health care wishes are recorded and at what level of detail, versus how much is left to physician's recollection at a later point in time.

#### *STUDY LIMITATIONS*

There are several potential limitations to our analyses. First, with respect to individual-level variables, we are limited by the availability of data collected by the sites. Although these data are very rich, a number of potentially important explanatory measures, for example, religion/spirituality, psychological factors, or attitudes toward health care technology are not available. Second, although we show the importance of the site indicators in advance directives' variations across PACE, we are not able to test hypotheses about specific site characteristics that may influence choices that patients make; except to suggest that local end-of-life practice may explain a significant proportion of the observed variations.

#### *PROGRAM VARIATIONS*

When all of the known participant characteristics are accounted for, there remains substantial amount of variation in  $R^2$  that is solely attributable to the PACE-site indicator. This suggests that choices made with respect to the end-of-life treatments are driven to a significant extent by program characteristics and/or practice styles prevalent in their communities. Indeed, we find a significant correlation between the percentage of DNRs in PACE and percentage of the population with seven (or more) days in the ICU in the last months of life in these programs' host communities. Furthermore, we find that in choosing the DNR code, 36% of the model's explained variance is attributed to

the site variable. The explanatory power of this variable is even greater with respect to artificial feeding, explaining 66% of the variance. Our interviews with the MDs offer some insights into these variations.

Several of our informants reported being somewhat reluctant to discuss specific treatment options, particularly with regard to artificial feeding, as a matter of course in their advance care planning with patients. The principal reasons offered for this reluctance are that (1) the treatment options—particularly the use of feeding tubes—are difficult to explain and are often too abstract for many of the participants at the time of usual advance care discussion; and (2) the efficacy of these treatment options will depend on a number of conditions, and it may not be informative to discuss them prematurely. This may, at least partially, explain why these two advance directives' choices do not necessarily vary in the same direction across the sites. It is important to recognize, however, that when these options are not discussed, default measures (i.e., full code or feeding tubes) may eventually be enforced.

When providers find the discussions of particular treatment options difficult, they may place greater emphasis on recording of health care proxies than of specific treatments. Indeed, we find 50% of the explained variation in the health care proxy multivariate model to be attributable to sites. Given studies, which show that surrogates' predictions of patients' preferences for life-sustaining treatments are mostly inaccurate (Houts et al. 2002), recording of specific patients' wishes should be made a priority as soon after enrollment as possible and be revisited often and regardless of what choices have already been made. In fact, frequent reassessment of the choices that patients make appears to be particularly important given our finding that the length of stay in the program is consistently and significantly predictive of advance directives' choices. The results suggest that participants with longer length of stay in the program (controlling for all other personal characteristics, including health status) are more likely to choose an advance directive (e.g., DNR or no tube feeding) rather than have one chosen by default (e.g., full code or tube feeding), compared to those with an average stay. Perhaps those with longer program experience have more opportunities for developing closer relationships with PACE providers, have more opportunities for discussions about advance care planning, or become more educated

about the different treatment options and thus more comfortable making decisions about them.

It is also worth noting that we observe higher than the average recording of DNR codes and of feeding tube refusals in sites where advance directives are reported, by the informants, to be routinely reviewed for all participants annually and/or following major health events. Interestingly, these are the sites that also report at least some program-specific staff training, as well as no discernible discomfort among its staff in conducting advance care planning.

According to our informants, with the exception of two sites, families are not routinely involved in advance care planning when the participants are cognitively intact. Yet, the influence of families on the choices that the participants make with regard to advance directives is undeniable. Our findings show that PACE participants who have living children are 30% less likely to select DNR than those who do not have children. According to at least some MDs we interviewed, the recorded decisions made by the program participants about advance directives are often not consistent with their own wishes but rather reflect those of their children: "They tell me they prefer DNR, but since their children do not, they will not select it." This seeming paradox has also been documented elsewhere (Blackhall et al. 1999). Assuring that family members are included in advance directives discussions may be crucial in guaranteeing that the participants' true wishes are honored.

#### *OPPORTUNITIES FOR IMPROVEMENT*

Our quantitative and qualitative findings shed new light on advance care planning among the frail elderly and suggest several lessons that could potentially lead to improvements in this process in PACE and elsewhere.

First, the findings suggest the need for a more focused and thorough education of the participants and their family members about the effectiveness and the consequences of life-saving and -sustaining treatments for frail older persons. Four of the nine informant-MDs believe that participants and their informal caregivers have an incomplete, if not altogether poor, understanding of the medical realities of certain default treatments (e.g., full code, feeding tubes). Yet, there appear to be few, if any at all, formal attempts to provide such educa-

tion to both patients and their families in the context of advance care planning discussions.

Second, although our informants emphasized the need for educating patients and families about advance care treatment options, the lack of educational opportunities for physicians, nurse practitioners, and others who engage patients in advance care planning is quite noticeable in PACE. Programs such as PACE (which rely on professionals from several disciplines to be involved in the advance care planning process) should implement interdisciplinary learning opportunities, perhaps as part of the primary care continuing education process, about how to collectively conduct, record, and manage advance care planning and how to provide for the educational and other needs of patients and families. Most physicians, and other health care professionals, receive very cursory, if any, school training in either end-of-life discussions or in patient-interviewing techniques. According to one of our informants, "When you take interviewing about a very emotionally charged subject, it is amazing that people are ill prepared to do it and have varying skills." There is no formal or even consistent informal training provided at PACE sites on conducting effective advance care planning discussions. This situation could be remedied by putting together formal PACE-wide protocols and instituting provider education programs relating to advance care planning discussions. A forum for this already exists through the semi-annual meetings of the National PACE Association, which bring together a variety of clinicians and other staff from each program. These meetings offer the programs a venue for narrowing the variations between the sites, which may result in improving advance care planning process and outcomes.

Furthermore, such cross-PAACE educational/training opportunities should also focus on issues of cultural competency in regard to advance care planning discussions. Several of our informants suggested that cultural/ethnic differences between participants and staff might create significant impediments to effective communication about advance care decisions, particularly if the participants and those eliciting advance directives are of different backgrounds, do not share the same personal views about end-of-life care, and/or do not recognize that such differences may be important. Other studies have shown that physicians and patients of same ethnicity share similar preferences for end-of-life treatments (Mebane et al. 1999).

In conclusion, this study shows that despite its high record of advance directives completion, the ongoing process of eliciting and revisiting these decisions, and the commitment to engage the participants and their families in those discussions, the PACE model still leaves room for improvement. The gold standard for advance care planning should be that patient wishes and characteristics ought to be the predominant predictors of the choices they make. Our findings, however, suggest considerable variation in the training, comfort levels, and communication skills of the PACE providers, all of which likely affect participants' choices of advance directives. Learning how to improve patient/family-provider communication skills and how to teach these skills to the practitioners may be key in moving closer to the gold standard.

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*Helena Temkin-Greener is a research associate professor in the Department of Community and Preventive Medicine at the University of Rochester School of Medicine and Dentistry. Her research interests include end-of-life care and outcomes, and financing and delivery of health care for the elderly. Recent work has focused on assessment of health outcomes in the Program of All-Inclusive Care for the Elderly (PACE) and on risk-adjusted payments for PACE.*

*Diane L. Gross was a postdoctoral research fellow in the Department of Community and Preventive Medicine at the University of Rochester School of Medicine and Dentistry during the time this study was conducted. She is currently a cultural anthropologist whose primary research interests are in health care and aging and in the anthropology of work and workplaces, with emphasis on political economy, public policy, race, class, and gender.*

*Dana B. Mukamel is an associate professor at the University of California, Irvine and a senior fellow at the Center for Health Policy Research. Her research focuses on issues related to quality of care and long-term care. Her recent work includes studies of the Program of All-Inclusive Care for the Elderly and nursing homes, quality report cards for nursing homes and cardiac surgeons, and racial disparities in access to high-quality cardiac care.*