

Completion of Advance Directives: Do Social Work Preadmission Interviews Make a Difference?

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Objectives: This study tests the efficacy of a preadmission, educational interview on advance directives, in this case, health care proxies (HCPs) offered to elective, orthopedic patients. Method: Using a quasi-experimental design, participants (n = 54) are assigned to either treatment group (who received the educational interview, conducted by a social worker, over and above the federally mandated written information on HCPs) or comparison group (who received the written information only). Results: Logistic regression analysis indicates there is a statistically significantly higher probability that a patient would sign an HCP if assigned to the treatment group than if assigned to the comparison condition. Conclusion: Benefits of educating patients about HCPs as part of routine social work practice are outlined.

Keywords: *advance directives; health care proxies; durable power of attorney for health care; health care education; end of life*

Advance directives are legally recognized instructions on health care. An advance directive is executed when a person is mentally competent and becomes active when his or her mental capacity to make decisions about health care is lost. Advance directives include the living will and the health care proxy (HCP), known in some states as the durable power of attorney for health care. A living will typically becomes effective when a noncommunicative patient is terminally ill or in a permanently comatose state, and it specifies which types of health care are desired. Common law (that is, law based on previous cases) recognizes living wills in New York, the state in which this study took place; however, unlike most other states, New York has no statute (that is, law passed by the legislature) recognizing them (New York State Bar Association, 2002).

The HCP—in contrast to the living will, which is a self-contained document—allows an individual, referred to as the *principal*, to nominate a trusted adult to be his or her health care agent, that is, a surrogate decision maker (colloquially known as a *proxy*). The agent has the authority to make medical decisions on the principal's behalf in a broad range of situations, life threatening or not, in which the patient is unable to make his or her wishes on health care known (New York State Bar Association, 2002; Osman & Perlin, 1994). Unlike living wills, HCPs are recognized by statute in New York, where the Health Care Proxy Law, which ensures that all valid HCP forms will be recognized, was passed in 1990 (New York Health Care Proxy Law of 1990). In addition, although some states legally protect surrogate decision making in the absence of an HCP, New York does not (John B. Renehan, counsel, New York State Task Force on Life and the Law, personal communication, March 25, 2003; New York State Bar Association), which is all the more reason why it is important for patients to possess an HCP.

Research has shown that medical patients and the general public are in favor of advance directives, and the large majority report that, if in a terminal condition, they would decline life-sustaining treatment most of the time (Chambers, Diamond, Perkel, & Lasch, 1994; Degenholtz, Rhee, & Arnold, 2004; L. L. Emanuel, 1993; L. L. Emanuel, Barry, Stoeckle, Ettelson, & Emanuel, 1991; Robertson,

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1993; Rubin, Strull, Fialkow, Weiss, & Lo, 1994). Reasons for declining heroic medical measures at the end of life include finding its use undignified, a desire to die at home (Byock, 1997), and disinclination to spend money on futile medical care (Rich, 2003). Indeed, research suggests that the use of advance directives may well curtail the cost of health care (Chambers et al., 1994; E. J. Emanuel, 1996).

There are no definitive, national data on the number of adults in the United States who have completed advance directives, but the U.S. General Accounting Office (GAO, now called the Government Accountability Office; 1995) estimated that between 10 to 25% of American adults have advance directives.

RELATIONSHIP BETWEEN EDUCATION ON ADVANCE DIRECTIVES AND COMPLETION RATES

In general, patients' responses to information on advance directives have been favorable. Patients who received mailed (only) information on advance directives have signed these documents at significantly statistically higher rates than patients who did not receive the information (Rubin et al., 1994). The timing of education on advance directives may be important. Cugliari, Miller, and Sobal (1995) found that patients who received written information on advance directives *before* admission were more likely to execute one than patients who received the information on the day of admission.

Mostly, studies have shown a positive relationship between educational interviews on advance directives and execution of these documents. Meier et al. (1996b) used a convenience sample ($N = 331$) of patients to test the effectiveness of physician-initiated counseling on HCPs, over and above the routine provision of written information about them, in an outpatient geriatric clinic. (The interview guide created by Meier et al. [1996b] is the one used in this study.) Among the intervention group, 44% completed an HCP within the study period that extended 28 months, compared with 31.5% in the comparison group. The reasons for the high number of patients who signed an HCP in the comparison group were unclear.

In another study, Meier et al. (1996a) examined the effects of counseling elderly, hospitalized patients ($N = 190$) on the HCP in a randomized controlled trial. Patient representatives encouraged those in the intervention group to complete an HCP. More than one third (36%) of patients in the treatment group signed an HCP. None in the control group did ($p < .02$).

Although there are exceptions—for example, High's (1993) study revealed an inconsistent association

between education on advance directives and self-reported rates of signing—efforts to educate patients about advance directives, on the whole, suggest that patients are responsive and complete an advance directive as a result.

RESEARCH QUESTION

This study examined whether education on HCPs provided preadmission by a social worker would lead to increased rates in completing these documents. To test this hypothesis, a group of patients received a preadmission educational face-to-face interview (over and above federally mandated written information) on HCPs and a group from whom the educational interview was withheld acted as a comparison group; their rates of completion of HCPs were then compared.

Rationale for Study

This study was designed to fill several research gaps in the literature. First, the Meier et al. study (1996b) investigated the efficacy of counseling by *physicians*. Physicians in clinical practice (and not engaged in research) do not, however, in general, spend time with patients discussing advance directives for many reasons. Physicians do not receive financial reimbursement from insurance companies for time thus spent (Rich, 2003). Physicians often experience discomfort when talking about advance directives (Virmani, Schneiderman, & Kaplan, 1994). In addition, physicians assume that if patients are interested in advance directives, patients will be first to broach the topic (LaPluma, Orentlicher, & Moss, 1991); however, patients believe that physicians should initiate the subject (L. L. Emanuel et al., 1991; Haas et al., 1993).

Social workers, in contrast, are ideally suited to educate patients about advance directives. Social workers' education and training on family relationships and practitioners' position as liaison (Johnson, 1999) among physician, family, and patient lead to an attuned professional who can assist patients in deciding on the person most appropriate to designate as proxy. Determining whether social workers are effective in this educational effort offers a compelling reason for this study. This line of inquiry is in keeping with social work's respect for self-determination across the life course and the concomitant professional duty to promote patients' rights at the end of life (National Association of Social Workers, 1993, 2000, 2004). (Beyond the scope of this article, in view of space limitations, is an adequate discussion of the complex bioethical theories and philosophical concepts that inform social work's values as they relate to

the end of life. Interested readers might consult Csikai and Chaitin [2006] for a useful summary.)

A second weakness to Meier et al.'s (1996b) study was the length of time—more than 2 years—between the intervention and measurement of the outcome. Extraneous variables, that is, events occurring outside of the study, may have affected the outcome and made it harder to isolate the unique effects of the intervention. A study that examines the effects of education soon after its delivery is warranted to more confidently assess the unique effect of the educational intervention.

Other studies (e.g., Meier et al., 1996a) examined already *hospitalized* patients. Practice standards suggest, however, that people should be informed about advance directives when they are not acutely ill and are in an outpatient setting rather than at the time of admission (GAO, 1995). Executing an advance directive involves important decisions, and, if those choices are to be well considered, it is only right that education on advance directives is provided at a time less hurried than that encountered at admission. This study therefore examines *preadmission* education in a sample comprising elective orthopedic surgical patients for whom surgery is frequently planned months in advance. During the interval between the scheduling of surgery and admission, time is available for patients to learn about HCPs. As far as the authors are aware, the effectiveness of preadmission educational interviews on HCPs, targeted at this population, has not been examined. If the experimental interview were found to be successful, this intervention might be offered to other groups of patients for whom hospitalization is planned in advance.

Finally, many previous studies have relied solely on patients' self-reports on their possession of advance directives (e.g., Gordon & Shade, 1999; High, 1993). Self-reporting can be unreliable, however. Furthermore, many experts on advance directives argue that the best place for an advance directive is on the medical chart, where it can be consulted if needed (GAO, 1995). This study therefore relied on chart review for evidence of HCP.

METHOD

Study Site

The study site was an urban, not-for-profit, acute care teaching hospital in Manhattan. The immediate neighborhood of the hospital is affluent, but the social and economic backgrounds of the patients are mixed. The bulk of patients treated at the hospital reside in New York State, with only about 8% of patients living outside the state. The study was approved by both the study site's Ethics Committee and

the Institutional Review Board (IRB) of the university to which the first author was affiliated.

Study Participants

The study sample was drawn from the population of adult elective orthopedic surgical patients who were admitted for hip or knee replacement surgery. Various considerations, from both methodological and practical points of view, informed the decision to limit this study to this population. First, restricting the study to this group increased the homogeneity of the sample, thus potentially making the identification of the unique effects of the intervention easier to detect. Uniformity enhances comparability between treatment and comparison groups. Second, from a practice perspective, and as touched on above, admission for elective surgical patients is planned weeks in advance, during which time patients can be seen by the social worker and educated on HCPs.

Study Site's Regular Practice of Informing Patients on HCPs (Comparison Condition)

The Patient Self-Determination Act of 1990 mandates hospitals that receive Medicaid and/or Medicare to inform patients about advance directives, and in accordance with this federal stipulation, the study site had written policies and procedures on advance directives. These policies and procedures stipulated that admitting personnel provide patients with written information about HCPs, in this case, a New York State Department of Health (1998) booklet; ask patients whether they had executed an advance directive and document on medical charts the patients' replies (*yes* or *no*, and the nature of the advance directive); place in a prominent section of the medical charts any advance directives that the patients brought with them to the hospital; and inform patients of their right to complete an HCP if they had not already done so. This was the *routine care* that all patients were mandated to receive.

Although not used as a major outcome measure, patients' self-reports on completion of an HCP made to admitting personnel were recorded by the authors. The reason why self-reports were examined (for both comparison and treatment groups) is that patients can possess valid advance directives but forget to bring these important documents to the hospital. In addition, given that some of the patients viewed their surgery as non-life threatening, they might have felt uncompelled to request the inclusion of their HCP on the medical charts. The presence of advance directives in medical charts might not, therefore, be a true indicator of their existence.

Inclusion and Exclusion Criteria

Inclusion criteria were being an adult, 18 years or older (in New York State, with few exceptions, only those who are 18 or older can assign an HCP), and English speaking (hospital resources precluded the use of interpreters), and reporting not having assigned an HCP. Patients who failed to comprehend the nature of the study (manifestations of lack of comprehension included incoherent replies and flight of ideas in introductory phone calls) were excluded from the study.

Patients who reported having already signed an HCP were excluded, because they were ineligible for the treatment or comparison groups. Individuals who believe they have already executed an HCP are hardly likely to avail themselves of education on HCPs (treatment condition) or find the federally mandated written information on HCPs (comparison condition) relevant.

Study Design

This study had a quasi-experimental research design, a (potentially) nonequivalent comparison group design with nonrandom assignment to treatment and comparison conditions (Campbell & Stanley, 1963).

The main outcome measure was the number or rate of HCPs completed by patients in the treatment and comparison groups. To test the major hypothesis, patients' medical charts were reviewed during or following admission for evidence of completed HCP forms. A dichotomous outcome measure (*yes*, completed HCP in the chart; or *no*, absence of completed HCP in the chart) was used. The rates of completing HCP forms in the two (treatment and comparison) groups were compared.

During one calendar year, the treatment and comparison groups were separately recruited during four intervals (each, on average, lasting 3 months) that did not overlap. The main reason for the alternating recruitment periods for comparison and treatment groups was the availability of the first author to conduct the treatment interviews at the study site. The major disadvantage to the manner in which patients were recruited is that patients were not randomly assigned to either treatment or comparison group. An advantage is that the treatment group members could not inform those in the comparison group about the new service, a feature that might have heightened the latter group's awareness of HCPs, thus confounding the results (Trochim, 2000).

Sampling and Recruitment

On a daily basis, and for the purpose of this study, the study site's social work department received written

notification of all future scheduled, elective, orthopedic surgeries; forms contained minimal information that included the patient's name, age, address, telephone, diagnosis, and dates of preadmission testing and admission. In the order in which documentation on surgeries was received, all patients in the sampling frame who met the inclusion criteria, discussed above, were invited via telephone to participate in the study. There were alternating recruitment periods for comparison and treatment group members, and assignment to either condition was solely dependent on the study's recruitment phase at the time when notification of a patient's surgery was received.

Treatment Intervention

The first author telephoned potential members of the treatment group approximately 2 weeks before the date of admission and invited them to participate in the study, which involved a face-to-face educational interview on HCPs. The timing was for the patients' convenience, because around that time patients were also scheduled to visit the hospital for preadmission testing. Interview protocols were used for all interviews.

Patients who participated in the treatment group received a structured educational interview. The first author offered all educational interviews, and they took place on average 7 days (range 3-17 days) before the date of admission. In all cases, the interviews occurred on the day of preadmission testing when patients obtained medical clearance for surgery. Interviews generally lasted between 15 and 30 minutes. Patients appeared comfortable discussing the topic, and no patient exhibited signs of distress (for example, fear, anxiety, and tearfulness) while discussing New York State Health Care Proxy Law and the means by which a person appoints a proxy.

An interview guide, "Talking Points for Discussing the Health Care Proxy Appointment Process With Patients" (Figure 1), developed by Meier et al. (1996b), henceforth referred to as *Talking Points*, was used to structure the content. This guide has been used in at least two research studies with elderly outpatients and inpatients (Meier et al., 1996a, 1996b). The use of an interview guide used by other researchers offered an opportunity to replicate another's approach, thus allowing comparison of the result of this and prior studies. Talking Points can best be described as a general interview guide because it lies between an open-ended conversation that is unplanned and a standardized interview guide that is followed exactly (Patton, 2002). Talking Points offers a list of topics to be discussed that are flexible in terms of ordering and emphasis. The topics covered by this general interview guide very closely

TALKING POINTS FOR DISCUSSING THE HEALTH CARE PROXY APPOINTMENT PROCESS WITH PATIENTS

Most of us will make our own decisions about what kind of health care we want when we get sick. Nevertheless, there are times when illness or some other problem may make us unable to think clearly enough to participate in these decisions. New York State has a new law allowing you to appoint another person to make decisions about your medical treatment in case you lose the ability to decide for yourself. The person you appoint is called your *health care proxy*.

1. The health care proxy is a person who can help make decisions about your medical care if you cannot.
2. You may choose anyone you trust to act on your behalf; the proxy may be a family member but does not have to be.
3. The proxy will only be asked to help make decisions about your care if you are unable to make your own decisions.
4. If you decide to appoint a proxy, you should make sure the person you choose is willing to act as your proxy.
5. To help your proxy make the decisions that are right for you, it would be helpful for you to discuss your values, your thoughts, and your feelings about medical care with your proxy. In particular, you may want to discuss your feelings about life support systems with your proxy. In general, you can assume that life support will be used if there is any hope of prolongation of life from treatment. Such treatments are usually given regardless of the quality of the life being prolonged. You may want to tell your proxy if there are any situations in which you WOULD or WOULD NOT wish to receive treatment to prolong your life.
6. If you wish, you may specify whether or not you want artificial feeding (feeding you through a tube in your nose, stomach, or vein) if you are unable to eat and drink normally. Other treatments that you may want to tell your proxy your wishes about are listed on the back of the form.
7. You may wish to appoint a secondary proxy in case the first person becomes unable or unwilling to serve.
8. [Please return the completed form to the clinic so that we can place it in your chart. (Note: This sentence was altered slightly to fit the setting.)] If you complete the form, remember to bring it to the hospital on your admission so that it can be placed on your chart.

SOURCE: From D. E. Meier et al., "Enhancement of Proxy Appointment of Older Persons: Physician Counseling in the Ambulatory Setting," 1996, *Journal of the American Geriatrics Society*, 44(1), 43. Copyright 1996 by Blackwell Publishing. Reprinted with permission.

Figure 1: Interview Guide Used With Treatment Group

outline the HCP form suggested by New York State. Only minor changes were made to Talking Points (Figure 1, point 8).

As the interview progressed, patients were shown an HCP form that was one page long. Patients were told that the form is simple to complete and that one does not need the help of a lawyer or notary public to fill it in. Each section (patient and proxy identifying information; optional instructions on specific treatments; name of substitute proxy, if desired; any time limits on proxy arrangement; patient's signature; and spaces for witness signatures) was explained. Toward the end of the interview, the interviewer added that, if the patient chose to complete the HCP form, it was very important to give one copy to his or her proxy, keep one for his or her records, and, most importantly, bring a copy to the hospital at time of admission. Added was the fact that many people have advance directives but they are not placed on their medical records.

At the close of the interview, patients were given a brightly colored folder to take home in which were two blank HCP forms—one extra in case of error in completion—and four pages of information on HCPs written by the New York State Department of Health (1998). Patients were encouraged to contact the first

author if any questions arose related to the study. Although further assistance was offered, no patient requested it related to HCPs from the first author.

Comparison Group Procedures

Members of the comparison group received federally mandated written information on advance directives *only*, in the manner common to all patients at the time of admission. Patients in the comparison group were contacted by telephone 2 to 8 weeks after discharge home. The comparison group was not contacted before admission to avoid heightening this group's awareness of HCPs, something that might have sensitized them to the federally mandated information on HCPs they received on admission. With patients' oral consent, participation amounted to the gathering of demographic information and a medical chart review for evidence of a completed HCP. Just as with participants in the treatment group, patients who reported already having executed an HCP before hospitalization were excluded. The rationale for the comparison condition was to allow measurement of the rate of signing HCPs in response to the federally mandated information received at time of admission (absent the experimental educational interview from a social worker).

Analysis Plan

The major research hypothesis of this study was that elective, orthopedic patients who agreed to a preadmission, face-to-face educational interview focused on HCPs would be more likely to complete an HCP before, or on the day of, admission than those in the comparison group who received federally mandated written information on HCPs in the manner common to all patients, but from whom the educational interview was withheld. The primary hypothesis, then, was that there would be a positive relationship between education on HCPs and rate of signing those documents, $y = f(x)$, where y , the dependent variable (signing of an HCP), is a function of x , the independent variable (namely, educational intervention). The outcome measure was the number or rate of HCPs completed by patients in the treatment and comparison groups.

To test this hypothesis, data in the form of completed HCPs (*yes* or *no*) on treatment and comparison groups' medical charts were collected. Demographic information (e.g., sex, age, race, and diagnosis) was also collected to assess whether treatment and comparison groups were equivalent. Logistic regression was used to identify the independent effect of the educational interview, with and without adjustment for selected covariates.

RESULTS

Telephone calls were made to 215 patients' homes with the aim of inviting them to participate in this study. Fifty-eight patients could not be reached, and of the 157 patients contacted, 30 declined to take part in the research. Reasons given for declining to participate included being too busy, having other concerns to attend to (for example, home care), lack of interest, putting things off, and finding the topic hard to talk about. Out of the remaining 127 patients who showed an interest in taking part in the research, 37 patients were excluded from the study because they reported having already executed an HCP. A further 33 were excluded from the study for other reasons. Reasons included failure to comprehend the nature of the study or being non-English speaking; absence of medical charts at medical records, which made HCP status during admission impossible to ascertain; hospitalizations being canceled; and receipt of educational interview (treatment condition) in cases in which an HCP had already been executed.

Study Sample's Demographic Characteristics

Fifty-four patients comprised the treatment ($n = 21$) and comparison ($n = 36$) groups. The ages of the patients in the treatment and comparison groups combined ($n = 57$) ranged from 28 to 82 years with a mean age of 64.21 ($SD 12.8$). The ages of patients in the treatment group ranged from 28 to 82 (mean 62.8, $SD 13.9$; Table 1). A comparison of the ages of members in the two groups using a Mann-Whitney test showed no significant differences between the two groups ($p = .66$). The nonparametric Mann-Whitney test was considered more appropriate than a t test for two reasons. First, the study involved a relatively small sample; and, second, age does not generally follow a normal distribution. Furthermore, the loss of statistical power in using a Mann-Whitney test is typically small.

The treatment and comparison groups were also compared with respect to other major demographic variables: sex, diagnosis, marital status, ethnicity, residence, insurance, and education. A Fisher's exact test was used to examine these categorical variables. Summary statistics are provided for each demographic variable in Table 1. The two groups were not found to be statistically significantly different in terms of any demographic variables: sex ($p = .99$), diagnosis ($p = .53$), marital status (one missing; $p = .99$), ethnicity (two missing; $p = .66$), residence ($p = .24$), or insurance (one missing; $p = .79$). All p values are two-tailed.

All patients sharing information on educational background (53 of 57) reported at least completing high school education, and the majority stated either having completed college or having postgraduate degrees. The two groups did not differ statistically in terms of education ($p = .78$, two-tailed).

Health Care Proxies on Charts

The main outcome measure was the presence or absence of an HCP on the patients' medical charts. After the intervention, 43% (9 of 21) of patients in the treatment group had an HCP on their charts, compared to 6% (2 of 36) of the patients in the comparison group ($p = .0013$; Table 2).

In the experimental group, the patients with an HCP on their charts had a mean age of 68.1, compared to 58.8 years for those without one (Table 3). Those with HCPs were predominantly female, white, and residents of New York State, and were admitted for hip rather than knee surgery. There was an even spread of educational backgrounds across those who had and did not have an HCP.

Logistic regression was used to determine whether those in the treatment group were more likely to have an HCP on their medical charts than those in the comparison group. Logistic regression was used because the dependent variable was dichotomous (HCP either present on, or absent from, chart). Without including demographics, the analysis (Table 4) showed that patients in the treatment group were more likely to have an HCP than those in the comparison group and that the difference was statistically significant ($p = .003$). The odds ratio, comparing the odds of members of the treatment group signing an HCP to the odds of members in the comparison group signing one, was 12.37 with a Wald 95% confidence interval of 2.33-65.65. Hence, to 95% confidence, the educational interview increases the likelihood that patients will have an HCP on their charts by at least a factor of 2 and possibly as much as 66. In addition, the standardized z scores indicate that the rate of signing an HCP in the treatment group was nearing 3 standard deviations higher than the mean.

As discussed above, examination of treatment and comparison groups' demographics did not reveal any statistically significant differences. To be conservative, however, a logistic regression including four demographic factors (age, diagnosis, race, and residence) as covariates was also performed. The first three variables listed are of interest for their potential predictive value according to the empirical literature. Residence (New York versus other states) was included because it was

TABLE 1: Demographic Characteristics of Treatment and Comparison Groups

Characteristic	Treatment (N = 21)	Comparison (N = 36)	p Value
Age			
Mean ± SD (Range)	62.81 ± 13.9 (28-82)	65.0 ± 2.1 (36-82)	.66
Gender			
Male	9 (43%)	16 (44%)	.99
Female	12 (57%)	20 (56%)	
Diagnosis			
Knee	4 (19%)	11 (31%)	.53
Hip	17 (81%)	25 (69%)	
Marital Status ^a			
Married	7 (19%)	11 (31%)	.99
Other	14 (81%)	24 (69%)	
Ethnicity ^b			
White	18 (86%)	31 (91%)	.66
Other	3 (14%)	3 (9%)	
Residence			
New York State	17 (81%)	23 (64%)	.24
Other	4 (19%)	13 (36%)	
Insurance ^a			
Private	12 (60%)	20 (56%)	.79
Medicare and private	8 (40%)	16 (44%)	
Education ^c			
Completed high school	3 (17%)	4 (11%)	.78
Some college	2 (11%)	7 (20%)	
College	7 (39%)	15 (43%)	
Postgraduate	6 (33%)	9 (26%)	

a. 1 missing.
 b. 2 missing.
 c. 4 missing.

TABLE 2: Number and Percentage of Health Care Proxies (HCPs) on Treatment and Comparison Groups' Medical Charts

Group	No HCP	HCP	Total
Treatment	12 (57%)	9 (43%)	21
Comparison	34 (94%)	2 (6%)	36

NOTE: Fisher's exact test: $p = .0013$ (significant difference between treatment and comparison groups).

theoretically possible that those residing in New York would have been more interested in the New York Health Care Proxy Law (1990) than those who lived in other states. Even after inclusion of these four covariates, a statistically significant difference in the rates of having an HCP was found between the treatment and comparison groups ($p = .005$; Table 5). With the inclusion of the covariates in the model, the odds ratio was actually higher than when the covariates were not included. The addition of the covariates weakens the statistical test, however, hence the lower p value.

Age, residence, ethnicity, and diagnosis were found not to have significant impact on signing an HCP (Table 5).

TABLE 3: Demographic Characteristics of Patients in Treatment Group Who Signed and Did Not Sign a Health Care Proxy

	Signed	No (N = 12)	Yes (N = 9)
Age			
Mean ± SD		58.8 ± 15.4	68.1 ± 10.2
Gender			
Male		6 (50%)	3 (33%)
Female		6 (50%)	6 (67%)
Diagnosis			
Knee		3 (25%)	1 (11%)
Hip		9 (75%)	8 (89%)
Marital Status			
Married		3 (25%)	4 (44%)
Other		9 (75%)	5 (56%)
Ethnicity			
White		10 (83%)	8 (89%)
Other		2 (17%)	1 (11%)
Residence			
New York State		9 (75%)	8 (89%)
Other		3 (25%)	1 (11%)
Insurance ^a			
Private		8 (67%)	4 (44%)
Medicare and private		3 (25%)	5 (56%)
Education ^b			
Completed high school		1 (8%)	2 (22%)
Some college		2 (17%)	0 (0%)
College		6 (50%)	1 (11%)
Postgraduate		2 (17%)	4 (44%)

a. One missing in nonsigning group.
 b. One missing in nonsigning group, and two in signing group.

Identifying demographic predictors of signing HCPs was not, however, the aim of this study, and the number of subjects is probably insufficient for this purpose.

In summary, patients who received the intervention were significantly more likely to complete an HCP than those who did not. The difference in the likelihood of having an HCP was highly statistically significant even after the potentially confounding influences of age, residence, ethnicity, and diagnosis were taken into account.

Level of Completion of Health Care Proxy Forms

Neither of the two HCPs filled out by patients in the comparison group was complete: In one case, the name of the proxy was missing; and in the other, one witness's signature was missing. In the treatment group, two of the nine lacked one witness signature. Values for a third are missing—the patient had an HCP on her chart during admission (as witnessed by the second author, the on-site coordinator), but when a more thorough review of the HCP form was attempted, the patient's chart was missing from medical records. Using Fisher's exact test, there was no significant difference ($p = .13$) in the documents' completeness between treatment and comparison groups.

TABLE 4: Logistic Regression Analysis: Independent Effect of the Educational Interview Versus Comparison Condition on Signing Health Care Proxy Without Adjustment for Covariates

Predictor	Coefficient ± SE	z	p Value	Ratio	95% Confidence Intervals	
					Lower	Upper
Constant	2.80 ± 0.73	-3.85	.000			
Group ^a	2.52 ± 0.85	2.96	.003	12.37	2.33	65.65

a. Treatment group or comparison group.

TABLE 5: Logistic Regression Analysis: Independent Effect of the Educational Interview Versus Comparison Condition on Signing Health Care Proxy Adjusted for Four Demographics

Predictor	Coefficient ± SE	z	p Value	Ratio	95% Confidence Intervals	
					Lower	Upper
Constant	-8.60 ± 3.83	-2.25	.025			
Group ^a	3.45 ± 1.23	2.80	.005	31.60	2.82	354.45
Age	0.057 ± 0.041	1.39	.166	1.06	0.98	1.15
Diagnosis	1.90 ± 1.44	1.33	.185	6.71	0.40	111.88
Race	-0.78 ± 1.42	-0.55	.582	0.46	0.03	7.42
Residence	-0.98 ± 1.29	-0.76	.447	0.38	0.03	4.69

a. Treatment group or comparison group.

Self-Report Versus Chart Documentation of Proxy

Discrepancies between the numbers of HCPs actually found on the medical charts and patients' self-reports of having HCPs to admitting personnel were noted. As mentioned previously, federal law requires that hospital staff ask all patients whether they possess an advance directive and that staff document the patients' self-reports in a prominent place in their medical charts. The study site used a standardized form for this notation. In general, medical charts were in compliance with the mandates of the Patient Self-Determination Act (1990). In a prominent place in the charts—usually, in the first few pages of the medical records—admitting officers had, in most cases, documented whether patients reported having an advance directive. One difficulty encountered by the authors, however, was locating HCP forms within the charts. Sometimes, the document was placed at the beginning of the chart after the admission forms. In other instances, it was at the very end of the chart or somewhere in the middle. Frequently, the authors had to search entire medical charts to ascertain presence of an HCP. In no instance was the advance directive flagged (for example, in a color-coded section of the medical chart with prominent notation of its existence).

In the treatment group, admitting staff had documented in 95% (20 of 21) of the medical charts the patients' self-reports on possession of an advance directive. Of these, 30% (6) patients reported that they

did not have an advance directive, 60% (12) said they had (9 found), 10% (2) said they had a living will (none found), and no patient reported having both a living will and an HCP.

In the comparison group, 89% (32 of 36) of patients' charts had admitting staff's notation on patients' self-report of possession of an advance directive. Of these, 75% (24) told admitting staff that they did not have an advance directive, 16% (5) reported they had an HCP (2 were found on charts), 9% (3) said they had a living will (none was found), and no one reported having both a living will and an HCP. Fisher's exact test revealed that the higher rate of self-report on the part of the treatment group compared with that of the comparison group was statistically significant ($p = .002$).

DISCUSSION AND APPLICATIONS TO SOCIAL WORK

This study showed that a preadmission interview on HCPs, offered to elective orthopedic patients, resulted in a statistically significantly higher rate of signing these documents on or before the day of admission compared to that of a similar comparison group. The success of the interview provided by a professional social worker mirrors similar findings reporting the positive effects of educational interviews conducted by physicians and patient representatives using the same interview guide (Meier et al., 1996a, 1996b), thus extending prior positive

results. The intervention offered in this study was in keeping with recommendations that education on advance directives should take place when patients are not acutely ill, before the beginning stages of mental incapacity, and in an outpatient rather than inpatient setting (L. L. Emanuel, Danis, Pearlman, & Singer, 2003).

Although the authors did not test different methods of educating patients about HCPs (for example, the mailing of information about HCPs to patients), the rate of completion of HCPs was higher in this study's treatment group than that found in Rubin et al.'s (1994) study, which involved only mailing of information. Hence, this research appears to lend weight to the view that education involving face-to-face interviews is more successful than simply mailing information to patients.

One major flaw in previous research was a very long period between the provision of experimental education on HCPs and the measurement of its effectiveness, which lowers one's confidence in the causal relationship between education and rate of signing. The short interval between the educational interview and measurement of the outcome of the intervention in this study (approximately one week) lowered the chance that extraneous variables (for example, a competing educational intervention) interfered with the effect of the education. This enhanced the internal validity of this research.

Interestingly, two patients were excluded from the treatment group after they had received the educational interview because they had forgotten they had already executed an HCP several years before. This finding raises an important practice and research question: Should educational efforts be directed to *all* patients irrespective of their self-reports on the possession of HCPs? This approach does not appear to be realistic, however. It seems unlikely that patients who believe they had already signed an HCP (but in reality have not) would attend an educational session on them. An alternative approach might involve more rigorous screening protocols in educational programs, for example, patients being asked to provide documented evidence of possession of an HCP before being excluded.

As noted in the literature, even when an HCP has been signed, it may not be easily retrieved from the medical chart. When the authors reviewed charts with the *express* purpose of determining the existence of HCPs, in many instances this necessitated an examination of charts in their entirety, be they on the medical floor or in the department of medical records. Although a simple policy, flagging advance directives with color-coded stickers and placing them in a section of their own, would make for quick and easy retrieval (Davitt & Kaye, 1996).

Some HCP forms located on medical charts were not completed correctly. Although completing the proxy form is straightforward for most patients, social isolation appeared to be a barrier for at least one patient, who reported he could not find a second witness. Therefore, it is advisable for admitting staff to not only ask patients if they have advance directives and, if available, place them on medical charts, but also closely inspect them for level of completeness and to assist patients in remedying this, if possible.

A requirement of the Patient Self-Determination Act (1990) is that health care facilities, on learning that patients do not have an advance directive, must inform patients of the nature of an HCP and of their right to complete one. Nonetheless, only 2 (6% of 36) members of the comparison group signed an HCP in response to federally mandated information on HCPs received on admission. Possible explanations for this are several. First, there might be a lack of educational effort on the part of admitting staff. Second, there is so much paperwork to attend to at the time of patients' hospitalization that workload might preclude due attention to HCPs. Third, as suggested by previous research, patients might not be responsive to information on advance directives at time of admission.

In terms of implications for routine social work practice, this study revealed that patients responded favorably to a social worker's outreach and appeared comfortable discussing HCPs. It therefore seems appropriate and feasible for a social worker to routinely educate elective orthopedic patients about HCPs before admission. The timing of education on HCPs must be carefully considered. Offering educational interviews on the day of preadmission testing appears to be a convenient time—arranging a meeting on another day would require the patient to make another trip to the hospital. There were, however, difficulties in this arrangement. First, patients' appointments with physicians, at the blood bank, for radiology, and so on rarely ran on schedule, and consequently the educational interview hardly ever occurred exactly on time. This posed no problem, because, other than conducting this study, the first author had no other professional responsibilities at the hospital and could be very flexible in working around the medical appointments. This is not the leisurely timetable that applies to the average hospital social worker, however. One suggestion for hospital social work practice with elective surgical patients is the *routinely scheduled* social work preadmission screening interview in which patients' discharge needs, HCPs, and any other social work concerns could be discussed.

This study has limitations, the major of which is lack of random assignment of patients to treatment and

comparison conditions. As Schilling (1997) pointed out, random field experiments in social work practice settings can be onerous; as noted, the main reason for the lack of a randomized controlled experiment was the availability of the first author to complete educational interviews. Despite lack of random assignment, when the demographics of the patients in treatment and comparison groups were compared, they were found not to be statistically significantly different. This finding goes some way in assuring the equivalency of participants in the two conditions.

The recruitment of patients in alternate phases (approximately 3 months in length throughout a period of one year) to either treatment or comparison group might pose a threat to the study's internal validity on the grounds of selection bias. The authors are, however, unaware of seasonal variation related to admissions for elective, orthopedic surgery. In regard to history, the authors are unaware of any public, prominent educational campaigns on advance directives that might have influenced patients over and above the treatment interviews.

Although the study sample was mixed in ethnicity, age, sex, marital status, and health insurance (Table 1), it did not precisely represent the general population of the United States or New York City. In particular, the study sample was quite well educated. Of the 127 patients who expressed an interest in participating in this study, 29% (37) reported they had already executed an HCP (and were, therefore, excluded). This percentage is higher than the GAO's (1995) estimate of those with advance directives (10 to 25% of the U.S. adult population). It is also considerably higher than the baselines found in previous empirical studies (e.g., 2.3% in Meier et al., 1996b), perhaps reflecting that the study sample was a well-informed one.

Elective, orthopedic patients do not usually anticipate that they will be in a situation that requires an HCP because their surgery is viewed as non-life threatening. The results cannot, therefore, be safely generalized to other patients who enter the hospital in acute conditions. Moreover, this study only addressed the effectiveness of *preadmission* education, which is clearly not an option for emergency admissions.

Thirty patients contacted declined to take part in the study. It is probable that patients who declined to participate in this study were not interested in the subject of advance directives and that thus the sample group was biased in favor of advance directives. Patients in *both* treatment and comparison groups agreed to participate, however, in a study the focus of which was advance directives and should therefore show the same bias. That their rate of signing HCPs was statistically significantly different demonstrates the effectiveness of the intervention.

Moreover, bias from this cause is irrelevant from the point of view of social work *practice*. Education on advance directives cannot be offered to patients who refuse that education. That said, it would be interesting to know whether the demographics of those who refused to participate varied from those who participated in the study. Relevant data for those who declined to participate were not available, however, due to IRB privacy limitations. In addition, questions remain related to the manner in which the topic of advance directives is best introduced to patients. A thorough examination of reasons for declining education on advance directives might yield important information on how to minimize future refusals.

Identification of demographic predictors of signing HCPs was beyond the scope of this study. Previous attempts to isolate the demographic predictors of executing advance directives have revealed ambiguous results suggesting that the predictors are not very strong. Such data might, however, suggest ways in which education might be tailored for particular groups, and this might be a useful avenue for future research.

Finally, the intervention did not involve the assistance of legal personnel or available volunteers to act as witnesses. Such help might have increased the rate of signing. Having this help on hand might, however, have led patients to assume a quick decision had to be made with not enough time to carefully consider whom they wanted to appoint as their proxy.

Of interest are the long-term effects of education on HCPs. During the study period, no HCP that was executed was needed by any of the patients. A longer term study could determine whether the appointed agents accurately represent the principals' wishes and the extent to which they were respected by the medical team. In addition, such research could ascertain whether patients who do not sign an HCP initially in response to education execute one in the future. In this study, the participants and social work interviewer did not have ongoing professional relationships, and it would be fruitful to discover if continuity of contact increases the likelihood of HCP completion.

In conclusion, within the current social context that includes the legal mandates of the Patient Self-Determination Act (1990), the increased use of medical technology at the end of life, as well as growing health care costs in part attributable to a growing elderly population, the use of HCPs is becoming increasingly important. This study showed that a preadmission interview on HCPs, provided by a qualified social worker and offered to elective orthopedic patients approximately one week before admission, resulted in a statistically significantly higher rate of signing these

documents compared to that of a similar comparison group. This relatively simple intervention might be offered in a routine manner not only to elective, orthopedic patients in general but also to other patients whose admissions are planned in advance.

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