The Journal of Sociology & Social Welfare

Volume 33
Issue 1 *March - Special Issue on Coping with Poverty*

Article 5

2006

Patient Insurance Status and Do-not-resuscitate Orders: Survival of the richest?

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This study investigated the effect of patient insurance status upon physicians' decisions to write do-not-resuscitate orders (DNRs). Ninety-four physicians completed a questionnaire consisting of demographic data and a case vignette. In addition to the main research question, the study explored the effect of religious affiliation on writing DNRs and performing "slow codes." Results indicate that insurance status has a significant effect upon the likelihood of writing a DNR, with physicians more likely to write DNRs for patients covered by public (i.e., government-funded, as compared to private) insurance. Religious affiliation was also significant, with greater church attendance associated with a lesser likelihood of writing a DNR. Results should be interpreted with caution; however, findings from this study support related research, and warrant further exploration.

Keywords: *health care, do-not-resuscitate, uninsured*

Health care resources are limited, and demand far exceeds supply. The United States spends in excess of one trillion dollars a year on health care (Callahan, 1998; Nesmith, 2004); still, estimates of the number of uninsured persons in this country range from 41 to 44 million (Mills, 2002; Beauregard, Drilea & Vistnes, 1997), and the number of underinsured has been estimated at an additional 56 million (Friedman, 1991).

There are three major sources of health insurance in the United States: private, employment-related coverage; publicly-funded, governmental programs (e.g., Medicaid); and individually-purchased private policies (Long, 1987). According to Cutler (1996), approximately 60% of the population was covered by

employer-based insurance in the mid-1990s, 20% was covered by public health insurance, and 7% by private policies. Unfortunately, spiraling unemployment, enduring economic recession, and decreasing sales revenues have severely limited state and local resources in recent years, and consequent fiscal cutbacks have led to severe restrictions or closures in many public programs which traditionally provided last-resort health care. Also, because the unemployed are less likely to have health insurance (Mills, 2002), record highs in unemployment levels mean increasing numbers of individuals are uninsured.

Those groups most likely to be uninsured are the poor, minorities, and young adults (Mills, 2002). When analyzed by ethnicity, it was found that 10% of non-hispanic whites had no insurance, compared with 19% of blacks, 18.2% of Asians/Pacific Islanders, and 33.2% of hispanics. Analyses by gender and age revealed that men were slightly more likely to be uninsured than women, and 18 to 24 year olds were the age group most likely to be uninsured. While almost all of the elderly are covered by Medicare, 8.5 million children had no insurance (Mills, 2002).

Insurance Status and Health Care

According to Kilner (1990), the uninsured use health services only about half as much as the insured, and have higher mortality rates as a result. In a retrospective analysis of hospital discharge data from a 1987 national sample of over half a million patients, it was found that uninsured patients were less likely to receive specialized services, and more likely to die during hospitalization (Hadley, Steinberg, and Feder, 1991). Even after controlling for poor health status on admission, the in-hospital death rate was 1.2 to 3.2 times higher for uninsured patients than patients with private insurance.

The poor are sometimes not told about treatments that are available to them (Kilner, 1990), and are less likely to receive costly or discretionary procedures (Hadley et al., 1991). In a retrospective study using data from the 1996–1999 Medical Expenditure Panel Survey, Thorpe and Howard (2003) found that uninsured

cancer patients received less health care than insured patients, despite paying over twice as much in "out of pocket" expenses.

Additionally, "dumping" of poor or uninsured patients (i.e., refusing admission or rapidly transferring to another hospital) has been common (Taira & Taira, 1991). In a study published one year after the enactment of the 1986 federal patient anti-dumping law, Ansell & Schiff (1987) found that approximately one-quarter million patients were dumped from hospital emergency rooms each year, causing delayed treatment and additional pain and suffering. Studies using various methodologies performed at five public hospitals across the country found that economic concerns were the predominant reason for patient transfers (Taira & Taira, 1991). In one of these investigations, a prospective study of 467 patients conducted at Cook County Hospital in Chicago, lack of insurance was the reason for 87 percent of all transfers for which information was available (Schiff, Ansell, Schlosser, Idris, Morrison, & Whitman, 1986). Of the patients transferred, 89 percent were black or Hispanic, and the average delay in obtaining treatment was 5.1 hours.

Social Value in the Medical Setting

All human societies consider certain classes of individuals to be more important or valuable than others (Crane, 1975). By interviewing and surveying physicians, Crane found that patients who were employed in high status occupations received more vigorous treatment than persons holding low status jobs. Pearlman and Jonsen (1985) reported that physician prejudices could "strongly affect" treatment plans for patients who failed to exhibit certain highly-valued social attributes. Similarly, Birdwell, Herbers, and Kroenke (1993) found that patient "presentation style" (i.e., being either "businesslike" or "emotional") affected physicians' treatment decisions. In field research conducted in the emergency room of a large county hospital in California, it was found that physicians were more likely to provide heroic life-saving efforts to persons who were perceived as contributing more to society (Sudnow, 1967). Persons who were seen as less valuable, for example the aged or 'deviant' (alcoholics, drug ad-

dicts, prostitutes, etc.), received less rigorous life-saving efforts, and less attention overall.

Do-Not-Resuscitate Orders

When a patient experiences cardiac or respiratory arrest in modern American hospitals, common practice is to announce "code blue" over the hospital intercom, including the location of the patient. This alerts all medical personnel to the emergency situation, and a hurried effort ensues to revive the patient.

In an article published in *Nursing Life* (1984), survey responses from 3,504 nurses were analyzed. Results indicated that "slow codes," i.e., responding slowly to a code situation (e.g., a respiratory or cardiac arrest), or not using every available lifesaving measure, had occurred in over 60 percent of respondents' hospitals across the United States and Canada. Additionally, 36 percent of the nurses responding stated that their hospital implicitly condoned such action, even though it is not legal.

The policy in many hospitals is to attempt to resuscitate all patients (Spencer, 1979), including the terminally ill (Rabkin, Gillerman & Rice, 1976), unless the physician has previously written a no-code order. Yet opinions regarding the appropriateness of resuscitation vary, and medical professionals are increasingly confronted with conundrums arising from the interplay of such factors as technological advances and growing patient autonomy (Rabkin et al., 1976).

In cases where resuscitation is clearly inappropriate, for example, when competent, terminal patients have requested that no attempts to revive them be made, the physician may include a written do-not-resuscitate order in the patient's medical chart (Rabkin et al., 1976). These orders are commonly referred to as "DNRs" or "no codes." In other circumstances, e.g., when a patient is not competent, or when a family member requests a DNR, appropriate procedures are less clear cut (Spencer, 1979). Advance directives are one method proposed to help resolve these types of predicaments.

Perhaps most relevant to the current investigation is a study conducted by Evans and Brody (1985) at three teaching hospitals

affiliated with Baylor Medical School in Houston. Using patient-specific questionnaires distributed to medical residents, Evans and Brody found that 17 percent of all do-not-resuscitate orders written by physicians were made without discussing the matter with either the patient or the family.

Summary

Differential access to health insurance coverage has been demonstrated, with ethnic minorities and young adults less likely to have insurance. Findings indicate that the poor and uninsured often receive substandard health care, and have higher mortality rates as a result. Because the distribution of poverty varies by race and ethnicity, minority populations may be disproportionately harmed by this phenomenon.

Additionally, studies reveal that physicians respond to patients not only with regard to their illness, but also in terms of their social characteristics. Furthermore, physician prejudices regarding the social worth or value of a patient can dramatically affect the type of treatment provided.

The current investigation attempts to determine whether patient insurance status is another variable that will influence physicians' decisions—specifically, decisions regarding orders not to resuscitate terminally ill patients. Given that health care resources are limited, and doctors are increasingly compelled to include financial considerations in their decision making; that uninsured patients often receive substandard medical care; and that social judgments regarding patients may influence medical treatment, it is hypothesized that physicians will be less likely to write do-not-resuscitate orders for terminally ill patients who have private insurance (i.e., more "affluent" patients) than for patients who have public insurance or no insurance information. Additionally, based on previous literature that indicates an association between religious affiliation and more "aggressive" medical treatment (Crane, 1975), it is hypothesized that physicians with a strong religious affiliation will be less likely to write DNRs, and less likely to perform a slow code, than physicians for whom religious affiliation was less important.

Methods

This exploratory study investigated the effect of patient insurance status upon physicians' decisions to write do-not-resuscitate orders. The unit of analysis consisted of individual physicians and medical residents practicing at a large teaching hospital in urban southern California. Respondents were asked to complete a 17 item, self-administered questionnaire consisting of demographic data and a case vignette. The number of questions was limited intentionally, because it was believed that physicians would be unwilling to devote a great deal of time to completing the instrument.

Facts contained in the vignette were based upon an actual case, in order to insure saliency of content. All details in the vignette remained constant except for information regarding the patient's insurance status—in one condition, the patient had private insurance; in another, limited, publicly-funded insurance; and in the final condition, no insurance information was provided.

Questions immediately following the vignette asked about the likelihood of writing a do-not-resuscitate order, and the reasons underlying the physician's decision. Demographic data included questions covering: age, sex, marital status, medical status, area of specialty, year in which M.D. was obtained, ethnicity, and religious affiliation. Items included in the questionnaire were developed by the author following an extensive literature review and were pilot-tested prior to being used in this study. Questions pertaining to religion were incorporated because the literature indicated that religious affiliation was consistently associated with a tendency to treat aggressively, regardless of the characteristics of the patient (Crane, 1975). Because the questionnaire was constructed specifically for this study, no data regarding validity or reliability are available.

Sample

Three hundred sixty questionnaires and consent forms were hand delivered in a non-random, convenience sample to all accessible offices on the medical center campus. Although dissemination of the questionnaires was non-random and purposive, subjects were randomly assigned to the three conditions (private, public, or no insurance information). A cover letter, which also

acted as the informed consent form, requested that completed questionnaires and consent forms be returned in two, separate, self-addressed stamped envelopes provided by the investigator.

Data Analysis

One hundred six of the 360 questionnaires were returned, a response rate of 29%. Of these, five responses from medical students and two from psychiatrists were eliminated, because it was believed that these individuals would have little or no experience in writing DNRs. An additional five questionnaires were excluded for failure to answer the main research question, or inconsistent responses. As a result, statistical analysis was based upon information derived from 94 responses (26%). Although this response rate is low, given the population (physicians and residents at an urban medical center), it is not uncharacteristically so (BetaWaves, 1997), and no "gold standard for an acceptable response rate" among physicians has been determined (Cummings, Savitz, & Konrad, 2001).

Initial analysis of the data consisted of descriptive statistics on demographic and case vignette variables. The chi-square test of statistical significance was used to examine the relationship between patient insurance status and likelihood of writing a do-not-resuscitate order. Chi-square was also used to explore the relationship between religious affiliation and likelihood of writing a DNR, and religious affiliation and likelihood of responding with a slow code. Finally, chi-square tests were conducted to compare the responses of males and females, different ethnic groups, and long-time physicians versus doctors who had received their medical degrees within the last ten years, with regard to the likelihood of writing a DNR.

Results

The sample was predominantly male (n=76, 80.9%), and Caucasian (n=68, 73%). Other ethnic groups included Asian American (n=15, 16.1%); Hispanic, or Pacific Islander (n=3 each, or 3.2%, respectively); and, African American or Native American (n=1 each, or 1.1%, respectively). Two respondents (2.2%) marked the category "other," and one provided no information on ethnicity.

Medical specialties represented included surgery (n=22, 24.4%), obstetrics and gynecology (n=13, 14.4%), oncology (n=12, 13.3%), neurology (n=7, 7.8%), pediatrics (n=6, 6.7%), and family practice (n=3, 3.3%). Other specialties listed by respondents included: allergy, cardiology, gastroenterology, infectious diseases, infertility, internal medicine, nephrology, orthopedics, pulmonary, and urology (n=27, 30%). Four doctors failed to provide information on medical specialty. Fifty-three respondents (56.4%) were employed full-time on the medical center staff, 35 (37.2%) were medical residents, and six (6.4%) listed "other" as their current medical status. A majority of the physicians (n=55, 58.5%) had received their medical degrees within the past ten years, while 39 (41.5%) earned their medical degrees more than ten years previously.

Respondents ranged in age from 26 to 70, with a mean age of 37 years. Most were married (n=70, 74.5%), 21 (22.3%) were single, two (2.1%) reported that they were living together or involved in a domestic partnership, and one (1.1%) was separated or divorced.

As a whole, the sample was not particularly religious. Thirty percent (n=28) listed "none" for religious affiliation, and over half attended services three or less times per year. Of those who did specify a denominational alliance, the numbers of Protestants, Catholics and Jews were relatively close (n=20, 21.5%; n=18, 19.4%; and n=16, 17.2%, respectively), and two persons (2.2%) identified themselves as Buddhist. Nine respondents (9.7%) marked "other," and one provided no information with regard to religious affiliation. Fifty-one subjects (56%) attended services three or less times per year, 15 (16.5%) attended four to 12 times per year, 11 (12.1%) two to three times per month, and 14 (15.4%) once a week or more. Three subjects failed to respond to this question.

A frequency distribution of the likelihood of writing a do-not-resuscitate order based upon the hypothetical vignette revealed that, overall, subjects were twice as likely to write a DNR as not. Thirty-eight respondents (40.4%) said that they were "very likely" to write a DNR, 25 respondents (26.6%) were "somewhat likely," 20 (21.3%) were "somewhat unlikely," and 11 (11.7%) stated that they were "not at all likely" to write a DNR. Given the poor medical status of the patient described in the vignette, the fact

that a majority of physicians (67%) indicated their likelihood to write a DNR is not surprising.

When the same responses were analyzed by patient insurance status, however, a striking pattern emerged. If the patient's insurance was listed as private, physicians were almost evenly divided as to whether or not to write a DNR: 19 physicians (54.3%) were "likely" to write a DNR, while 16 (45.7%) were "unlikely." When the patient's insurance was listed as "public," however, almost 82% of physicians (n = 27, 81.8%) were "likely" to write a DNR, while only 18.2% (n = 6) were "unlikely." In cases where insurance status was "unknown," 65.4% of physicians reported being "likely" to write a DNR, and 34.6% were "unlikely." These differences were statistically significant, X^2 (2, N = 94) = 5.87, p = .05.

Additional analyses were conducted separately by gender, ethnicity, and amount of physician experience. None of these analyses revealed any significant differences in the likelihood of writing a DNR, or in the influence of insurance status on the decision to write a DNR.

Asked about the possibility of responding to the given scenario by using a slow code, the physicians' responses were more evenly distributed. Forty-four subjects (48.9%) stated that they would be "likely" to use a slow code, while 46 (51.1%) reported being "unlikely" to do so. Four subjects did not respond to this question. Insurance status did not have a significant effect on the likelihood of responding with a slow code. Finally, when analyzed separately by gender, ethnicity, and amount of experience, no significant differences in likelihood of responding with a slow code were revealed.

Although the majority of respondents in the sample were not particularly religious (i.e., 56% attended religious services three or less times per year), religion did appear to have a strong influence upon the likelihood of writing a DNR. Subjects who attended religious services at least once a week were more than two and one half times *less likely* to write a DNR, when compared to those who attended services three times a year or less (Table 1). The relationship between religious affiliation and likelihood of responding with a slow code was not significant. However, results appeared to reflect a trend in the same general direction as with

Table 1

Likelihood of Writing a DNR by Religiosity (N = 91)

	Likelihood of Writing DNR			
	Likely		*Unlikely*	
Attendance at Religious Services	*N*	%	*N*	%
Three or less times per year	39	76.5	12	23.5
Four to 12 times per year	10	66.7	5	33.3
Two to three times per month	7	63.6	4	36.4
Once a week or more	5	35.7	9	64.3
Total	61	67.0	30	33.0

Chi square = 8.33 df = 3 p = .04

religious affiliation and DNR—i.e., those who were more religious were less likely to use a slow code.

Physician Comments about the Vignette

Following the vignette, physicians were asked to briefly describe any important factors that influenced their likelihood of writing a DNR. Ninety-three out of 94 subjects (98.9%) responded to this open-ended question. A content analysis found that the most common reply cited the patient's "poor prognosis" or "medical condition" as an underlying consideration (N = 46, 49.5%). Ten physicians (10.8%) mentioned the patient's mental status, usually noting the absence of data regarding this variable. Poor social or economic support was cited by three respondents (3.2%); and four physicians (4.3%) mentioned the patient's age and/or history of smoking. Each of the above-listed factors were almost evenly distributed across the three insurance conditions.

The patient's use of alcohol was mentioned by eight physicians (8.6%) as an underlying factor which influenced the decision to write a DNR. Interestingly, in six of these eight cases (75%), patients were listed under the "public" insurance condition. "Private" and "unknown" insurance conditions each received only one response (12.5%, respectively) which mentioned patient alcohol use. This pattern of responses may indicate that alcohol abuse

is perceived by some physicians as a more socially-acceptable justification for discontinuation of care than economic or social considerations.

The patient's desires or wishes were cited by 31 respondents (33.3%) as an underlying factor. Generally, physicians wrote that they would need to take the patient's wishes into account before making a decision regarding the DNR. Here again, the responses were unevenly distributed across the three insurance conditions, although in the opposite direction. Patient's wishes were mentioned by 17 of the 31 doctors (54.8%) in the "private" insurance condition, ten doctors (32.3%) when insurance was "unknown," and only four doctors (12.9%) when insurance was "public."

Several doctors added interesting comments which provided insight into their rationale. For example, one physician referenced the patient's poor prognosis and wrote, "His medical condition is such that if he were to have a cardiac arrest, resuscitating him would be a cruelty." The same doctor added that she felt there should be different levels of DNR status, ranging from traditional DNRs, to "no heroics," to withholding antibiotics, withholding further operations, etc. She concluded with an emphatic statement that the courts should *not* become involved. Legal issues were also on the mind of another respondent, who wrote, "You do not address fear of legal liability, which hangs over doctors like a grey cloud and influences their behavior."

Another physician stated that she believed most physicians are reluctant to discuss DNRs with patients and their families; then wrote,

> I tend to be aggressive in doing so, and have never had a patient or family be anything but relieved that the topic had been broached. Inappropriate aggressive management of terminal patients resulting from inadequate discussions with patients and families is inexcusable.

A similar sentiment was expressed by a male respondent, who wrote,

> The fact that doctors do *not* feel comfortable enlisting the family in the discussions of DNR orders most of the time makes me *sick*. Just what is a doctor's responsibility!? When a patient is no longer treatable is it not logical to treat the patient's family?

Other responses included one from a resident who wrote, "Prolonging an unproductive life for a short period of time is not worth it," and another from a surgeon who said, "As long as there is hope, I will not discuss DNR orders." One particularly thoughtful respondent wrote,

> Physicians in this country are sometimes hesitant to confront these issues, hiding behind "no one can be 100% sure" and "no one can play God." We need to realize that modern hi-tech medicine *has* given us the ability to play God, and we need to come to terms with this situation.

Discussion

The major finding of this study was that patient insurance status had a significant effect upon physicians' decisions to write do-not-resuscitate orders. When presented with a patient who had private insurance, physicians were almost equally likely to write, or not write, a DNR. If the patient's insurance was listed as publicly-funded, however, physicians were four times more likely to write a DNR than not to do so. These findings supported the hypothesis that physicians would be less likely to write a do-not-resuscitate order for terminally ill patients who had private insurance (i.e., more "affluent" patients) than for patients who had public insurance or no insurance information. These findings are consistent with earlier studies in which physician prejudices regarding patient age, race, income level, and "social worth" or "presentation style" affected the type of treatment received (Birdwell, 1993; Crane, 1975; Eisenberg, 1979; Pearlman and Jonsen, 1985; Sudnow, 1967). The results also support Thorpe and Howard's (2003) study, in which uninsured cancer patients received less health care than insured patients, despite paying over twice as much in "out of pocket" expenses.

Findings regarding the effects of religious affiliation were more disparate. Religious affiliation had a significant effect on the likelihood of writing a DNR, with physicians who attended religious services "very frequently" being two and one half times *less* likely to write a DNR when compared to physicians who attended services infrequently (i.e., three or less times per year). This is an especially powerful outcome, considering the fact that

the overall frequency distribution of the likelihood of writing a DNR indicated that respondents were twice as likely to favor writing the order. These results provide strong support for earlier research by Crane (1975), who found that religious affiliation was associated with a tendency toward more aggressive treatment of the patient. However, no support was found for the hypothesis that physicians with a strong religious affiliation would be less likely to perform a slow code.

Limitations

The most significant limitation of this study was the inability to obtain a random sample because of time and cost constraints. This weakness effects external validity, limiting the generalizability of results. A second important limitation was the small response rate—106 out of the 360 questionnaires distributed, or 29%. Because of the sample size, few women and minorities were included in the study, further restricting generalizability of the results. Still another concern is that those subjects who did respond may have been "self-selected" in some way; for example, if only those physicians who had especially strong opinions about DNRs returned questionnaires, the results may well have been biased.

Another weakness is the lack of data regarding reliability and validity of the survey instrument. One serious concern about validity is that vignette research cannot accurately reflect actual medical practice; in real-life situations, physicians may respond very differently from the way they would on a questionnaire. Other limitations include constraints caused by the brevity of the questionnaire, and the possibility of a social desirability response bias (i.e., physicians may have answered in ways which they believed would reflect favorably on them).

Implications for Non-medical Helping Professionals

In health care settings, there are several ways non-medical helping professionals can act to influence the plight of those who may be considered "a burden on society, like the aged and the poor" (Thomasma, 1991). Social workers and marriage family therapists bring a unique set of skills to the health care setting; these can be used to facilitate interdisciplinary communication, and advocate on behalf of patient self-determination.

According to Eggerman and Dustin (1985), studies have indicated that physicians would welcome consultation or continuing education which includes techniques to be used with terminal patients. Non-medical helping professionals' distinctive focus on patient psychosocial needs may make them particularly qualified to address such matters, and to assist physicians in dealing with any of their own unresolved feelings about dying and death.

Educational programs or interdisciplinary discussion groups led or initiated by non-medical helping professionals could also be used to help health professionals from different disciplines to recognize and understand each others' feelings, clarify misunderstandings, and ultimately, lead to better-coordinated, more effective patient care. Finally, more helping professionals should become active participants on hospital bioethics committees, helping to develop better policies and guidelines regarding treatment of the poor and terminally ill.

Suggestions for Future Research

This exploratory study examined a research area that had received little previous attention. Because of the limitations associated with sample size and non-probability, the research should be replicated using random sampling techniques and a larger sample. Stratified random sampling techniques would allow for the inclusion of more female and minority physicians, leading to increased generalizability and an enlarged knowledge base. Clearly, the role of gender, ethnicity, and experience of the physician are worthy of further study.

Because subjects in the current study work in a university teaching hospital which serves a large indigent population, their responses may have been biased. Additional research is necessary to compare the responses of physicians in private practice, and those working in various community hospital settings. It would also be interesting to analyze the effect of physician specialty on the likelihood of writing DNRs.

It has been over 35 years since Sudnow conducted his pioneering observational research, and additional field studies comparing the treatment of patients with public versus private insurance would be most enlightening. This type of investigation is critically important, since physicians may respond differently on

questionnaires than in actual practice. Another promising area for field research would include the content and process of communication between physicians and other health professionals when treating indigent or dying patients.

Conclusion

This research utilized survey data from a non-random sample of 94 physicians and residents currently practicing at a large, urban teaching hospital in Southern California. The study enlarged upon the available literature to investigate an area that has received little previous research attention; i.e., the effect of patient insurance status upon physicians' decisions to write do-not-resuscitate orders. There were two basic research hypotheses. First, it was hypothesized that physicians would be less likely to write do-not-resuscitate orders for terminally ill patients who had private insurance than for patients who had public insurance or no insurance information. Second, it was expected that physicians with a strong religious affiliation would be less likely to write DNRs, and less likely to perform a slow code, than physicians for whom religious affiliation was less important. While results provided support for each of these hypotheses, additional research into this area is necessary before any definitive conclusions can be drawn.

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