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APPENDIX TABLE 1

MEAN NUMBER OF WEEKS PRACTICED PER YEAR, BY SPECIALTY

	SPECIALTY								
YEAR	All	Gen. Prac.	Int. Med.	Surg.	Ped.	Ob/G.	Rad.	Psy.	Anes.
1970	47.5	48.1	47.2	47.4	48.1	48.0	49.0	46.2	46.1
1972	47.2	48.1	47.2	46.8	47.4	47.5	47.1	47.4	46.2
1973	47.2	47.4	47.1	46.9	47.5	47.7	47.1	47.4	46.9
1974	47.2	47.4	47.3	47.2	47.6	47.4	46.7	47.4	46.5
1975	47.2	47.4	47.2	46.9	47.3	47.3	47.4	47.4	46.2
1977	47.0	47.2	47.1	47.0	47.2	47.4	47.2	46.9	45.9
1978	47.4	47.8	47.2	47.0	48.2	47.9	46.8	47.7	45.8
1981	46.4	47.2	46.2	46.3	46.4	46.5	46.1	47.1	45.7
1982	46.6	46.9	46.7	46.2	47.2	46.9	46.2	47.2	46.1
1983	46.9	47.2	47.0	46.9	47.2	47.1	45.4	47.0	45.4
1984	47.1	47.6	47.2	47.3	47.4	46.9	45.4	47.1	45.6
1985	47.6	48.5	47.8	47.3	48.0	48.0	45.4	47.6	46.4
1986	47.5	48.3	47.9	47.1	47.8	47.6	45.6	47.6	46.3
1987	47.1	47.7	47.4	47.0	47.4	47.1	45.2	47.3	45.3
1988	47.1	47.9	47.3	46.9	47.2	47.3	44.9	47.4	45.8
1989	47.1	48.1	47.1	46.9	47.4	47.3	45.1	46.8	45.5

Note and Sources: Same as Table 1.

Living Will Legislation, Nursing Home Care, and the Rejection of Artificial Nutrition and Hydration: An Analysis of Bedside Decision-Making in Three States

Gunnar Almgren, PhD

ABSTRACT. Although state living will legislation establishing the boundaries of unwanted medical intervention has become almost universal, many states define artificial nutrition and hydration as a basic comfort measure rather than extraordinary intervention. In addition, several states have legislation prohibiting its withholding or withdrawal under any circumstances. Despite the recent growth in public awareness and controversy concerning artificial nutrition and hydration, there is little known about the actual influence of prohibitive legislation on bedside decisions involving its withdrawal. An analysis is undertaken of nursing home decision-making concerning the withdrawal of artificial nutrition and hydration in three states with typical variation in living will legislation specific to its legality. Data from interviews with 140 nursing home directors of nursing service responding to hypothetical case vignettes suggest that living will laws prohibiting the withdrawal of artificial nutrition and hydration have little influence over bedside decision-making in nursing homes. Factors found to be determinate of the likelihood of the withdrawal of artificial nutrition and hydration include the com-

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The author wishes to thank Ron Anderson, Christine Cassel, Katherine Donato, Mitchell Eggers, and Henry Glick for their advice and comments on an earlier draft. The analysis presented was carried out with the support of an NIA postdoctoral fellowship, for which the author is most grateful.

Journal of Health & Social Policy, Vol. 4(3) 1993
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petency of the nursing home resident and form of nursing home ownership. State context exerts a significant influence over the likelihood of artificial nutrition and hydration withdrawal, but not in a direction consistent with language of living will legislation.

A dominant trend in American medicine since the advent of the Medicare program in the mid-1960's has been the exploitation of advances in medical technology to sustain and prolong life in health states that formally were regarded as beyond the benefit of anything but palliative medical intervention. Although it is sometimes forgotten in the heat of debate, advances in life prolonging medical intervention were largely a product of restorative medical care innovations rather than a specific effort by American medicine to prolong life for its own sake. Nonetheless, at some point in the first decade of Medicare the line between providing basic *comfort giving care* and *life prolonging intervention* became largely indistinguishable, and the medical community found itself unable to achieve consensus on what the line was, who should draw it, and whether in fact it should be drawn. In the vacuum that resulted, a counter trend ultimately emerged in the form of legislation and litigation concerned with defining the limits of medical intervention in health states generally regarded as hopeless. Despite the fifteen years that have passed since the enactment of the first "living will" law aimed at defining the limits of medical intervention, very little is known about the relationship between such legislation and actual bedside decision-making. This study examines this relationship as it pertains to one form of life prolonging medical technology that is particularly controversial-artificial nutrition and hydration.

THE SPECIAL CASE OF ARTIFICIAL NUTRITION AND HYDRATION

The general definition of life-sustaining medical technologies are drugs, medical devices, or special procedures that can keep a person alive who would otherwise die within a foreseeable time period (Office of Technological Assessment, U.S. Congress, 1987). Artificial nutrition and hydration (commonly referred to as "tube-feeding") in its various forms is a life-sustaining medical technology widely used among populations for whom the efficacy of defeating the biological limits to survival is often questioned: persons in some form of persistent vegetative existence and bedfast institutionalized elderly for whom the addition of additional life years may be both unwelcome and of questionable benefit by any measures other than life itself. Artificial nutrition and hydration (ANH) also happens to be the most widely applied life sustaining technology to persons of all ages (and the elderly in particular) for restorative as well as custodial medical intervention (refer to Table 1). Despite the dominance of ANH as a life-sustaining medical technology, up until very recently public outcry, legislation, and judicial remedies to such unwanted medical intervention have focused almost exclusively on the less pervasive and more visible "high tech" life sustaining interventions: mechanical ventilation, cardiopulmonary resuscitation, and to a lesser extent kidney dialysis.

The first case of appellate litigation dealing with the issue of ANH did not occur until 1983 (*In re Barber*, California, 1983), several years after the Quinlans won the decision to have their comatose daughter removed from an artificial respirator. It is both

Table 1. Estimates of the Current Utilization of Life Support Technologies

Technology	Total Persons (All Ages)	Total Persons Aged 65+
Dialysis	90,621	27,641
Mechanical Ventilation	3,775 to 6,575	1,250 to 2,200
Nutritional Support	1,404,500	680,000
Enteral	848,100	450,000
Parenteral	556,400	230,000

Source: Table 1-1, U.S. Congress, Office of Technological Assessment. *Life-Sustaining Technologies and the Elderly*. 1987: Washington D.C.: U.S. Government Printing Office.

ironic and instructive to note that Karen Quinlan, whose personal tragedy led to the earliest surge in living will laws during the 1970's, lived another ten years sustained in a persistent vegetative state by ANH after her mechanical ventilation was discontinued under court sanction. Karen Quinlan's ten year survival on ANH is instructive in two senses. First, we see in the Quinlan case an eloquent albeit tragic comparison of the relative influence of ANH versus mechanical ventilation as a life-sustaining technology. Second, despite what the Quinlans went through to discontinue what was argued by their advocates as a meaningless existence sustained by mechanical ventilation, there obviously remained major inhibitions and barriers concerning the withdrawal of ANH.

Despite the position of the American Medical Association and many medical ethicists that ANH is a life prolonging technology whose efficacy is subject to the same essential considerations as other life prolonging medical technologies (Dickey, 1989; Watts and Cassel, 1984), the special reluctance to the withdrawal of ANH observed in the Quinlan case has remained a persistent contradiction to the growing consensus within the medical profession concerning the limits of other forms of life-prolonging medical intervention. Even Daniel Callahan, an outspoken critic of contemporary assumptions of unlimited entitlement to life prolonging medical care in old age (Callahan, 1987), has admitted a strong aversion concerning the withdrawal or withholding of ANH under the most hopeless of circumstances (Callahan, *On Feeding the Dying: In Defense of Sentiment*, 1985). Unlike the case with other forms of life prolonging medical technology, there is no easily recognizable dividing line between those ascribing to an aggressive pro-life ideology and those more concerned with issues of autonomy, distributive justice, and medical efficacy.

It is beyond both the scope and intent of this paper to explore and debate all the reasons why ANH has remained a special case of life-prolonging technology both within the medical professions as well as in the courts and legislatures, however, three are briefly suggested. The most obvious reason is that nourishment in any form is associated with compassion and comfort giving, and the withholding of nourishment infers neglect, suffering and cruelty (Lynn and Childress, 1983).[1] A second reason is the pervasive mentality in American medicine that whatever is simple to provide and relatively inexpensive is basic, whereas whatever is technologically complex and expensive is extraordinary. Brown and Thompson (1979), in their research findings concerning the application of life-sustaining technologies in nursing homes, suggest that the more simple the treatment or nurturing the technique the more difficult it is to withhold under any circumstances. To the extent that recent innovations in ANH technology have greatly reduced the need for inpatient hospitalization and surgery to accomplish permanent means of artificial nutritional support, the perception of such intervention as simple and basic may be even stronger. The third reason, having to do with both of the preceding observations, is that in many settings ANH is more of a nursing routine than an independent and considered physician driven decision. For example, it is a common practice for nursing homes to routinely implement ANH as a nursing procedure based on some minimal threshold of caloric intake, independent of the considerations introduced if interventions like dialysis or even medication changes are proposed.

THE EMERGENCE OF LITIGATION AND LEGISLATION DEALING WITH THE ISSUE OF ARTIFICIAL NUTRITION AND HYDRATION

Public policy innovations concerning the appropriate application and limits of medical technology in the U.S. have originated in two state level policy-making institutions that both compliment and compete with one another in the policy-making role, the legislatures and the courts. The interactive nature of litigation and legislation in the case of public policy innovations emerging over the last several years addressing the issue of ANH is well documented by Glick and Hays (forthcoming) and is briefly described as follows.

When first introduced in 1976, living will laws were a public policy innovation adopted by state legislatures to alter the "everything that can be done must be done" mentality in American medicine made unworkable by the consequences of medical technology and changing public attitudes. However, the failure of early ver-

sions of living will laws to deal with the role of ANH as a life-prolonging medical intervention resulted in a later wave of public policy innovation, this time as patients and more commonly their surrogate advocates sought to have this seemingly basic and benign technology removed. The first case of litigation aimed explicitly at the issue of ANH occurred in 1985 (*In re Conroy*, N.J.), nearly ten years after the first living will legislation was passed in the state of California. The interactive process of legislation and litigation addressing the issue of ANH was observed as states that were relatively late adopters of living will legislation addressed the issue of ANH directly, and some states that implemented living will legislation in earlier years amended their living will laws to incorporate the ANH issue–largely in response to the explosion of ANH related litigation that arrived on the heels of the Conroy case (Glick and Hays, forthcoming).

The current status of living will legislation concerning the issue of ANH reflects enormous interstate variability. As shown on Table 2, a minority of states (38 percent) having living will laws clearly allow the withdrawal or withholding of ANH under a variety of circumstances. Half the states with living will laws either fail to explicitly deal with the issue of ANH or define it as "comfort care," leaving its withholding or withdrawal heavily dependent on judicial and medical interpretation of legislation. It should be noted however, that only 5 states out of the 43 (44 including the District of Columbia) passing living will legislation retain legislation that *specifically prohibits* the withdrawal or withholding of ANH. Of those five states, only one (Kentucky) lacks either a court case or "durable power of attorney" legislation which runs contrary to the language of living will legislation prohibiting the withdrawal of ANH (SRTD, 1991). This is largely because state appellate courts almost without exception have favored petitions advocating withdrawal of ANH where either no benefit to the patient is established and/or patient autonomy is unambiguously at stake (SRTD, 1989; Almgren, 1990). Where this broad trend legitimizing decisions to withhold or withdraw ANH under a range of qualifying circumstances leaves more prohibitive legislation is both unknown and the principle empirical question behind the analysis that follows.

Table 2. Distribution of State Living Will Statutes on the Question of Artificial Nutrition and Hydration

May be Withdrawn	Regarded as Comfort Care	May Not Be Withdrawn	No Mention
Alaska	Arizona	Connecticut	Alabama
Arkansas	Hawaii	Georgia*	California
Colorado	Indiana	Kentucky	Delaware
Florida	Iowa	Missouri	D.C.
Idaho	Maryland	Wisconsin*	Kansas
Illinois	New Hampshire		Louisiana
Maine	South Carolina		Mississippi
Minnesota	Utah		Nevada
Montana			New Mexico
North Dakota			N. Carolina
Ohio			Texas
Okahoma			Vermont
Oregon			W. Virginia
South Dakota			Washington
Tennessee			
Virginia			
Wyoming			
N=17	N=8	N=5	N=14
38%	18%	11%	32%

Source: Adapted from The Society for the Right to Die. 1991. *Tube Feeding Law in the United States*. New York: SRTD.

*Since the date of the study, "durable power of attorney for health care" or other legislation has emerged that specifically authorizes the withholding/withdrawal of artificial nutrition and hydration, despite the language of living will statutes that specifically excludes the possibility of withdrawing or withholding this particular form of medical intervention.

ASSESSING THE DIRECT INFLUENCE OF LIVING WILL LEGISLATION ON BEDSIDE DECISIONS INVOLVING ARTIFICIAL NUTRITION AND HYDRATION

The definition of bedside decision-making used for the purposes of this discussion are decisions made by the providers of medical care concerning the use of particular forms of medical intervention (in this case ANH) under individual circumstances. The providers

of interest are nursing homes, since they are the typical provider for custodial long term care patients sustained by ANH (OTA, 1987). When nursing homes are confronted by demands by patients or patient surrogate decision-makers (e.g., a spouse, adult child, or guardian) to either withhold or withdraw medical intervention that would ordinarily be provided, three decision-making outcomes are possible. The first is a decision by the nursing home to provide the intervention in question irrespective of patient/surrogate demands to the contrary. The second of the three possible decisions is to defer to external authority in the decision, making the withholding or withdrawal of the intervention contingent on clear sanction by a higher authority-typically a court of law. The final of the three possible decisions is to accede to the demands to withhold/withdraw the intervention in question.

Although the U.S. Supreme Court majority opinion in *Cruzan v. Harmon* (1990) provides additional support for the authority of state living will legislation over bedside decision-making,[2] several conditions must be met in order for living will legislation to be assured exercise of that authority: a living will document or its equivalent must have been executed by the patient, its stated intents must be sufficiently clear, relevant, and interpretable to the situation at hand, the intents of the document must be consistent with the intents of the legislation that upholds its legitimacy, the document must be available at the point of decision-making, and its explicit and implicit intents must be followed by the decision-makers themselves. As a practical matter, these conditions are very difficult to meet.

To begin with, despite over a decade of experience with living will laws, relatively few people execute such a document or speak with their physician about limiting care (Smedira et al., 1990). A recent study suggests that even when aggressive and specific efforts are made to educate and empower older adults concerning the executing of advanced directives, most people remain reluctant to discuss such issues with their physicians (Sachs, Stocking, and Miles, 1990). Although the recent implementation of federal legislation (P.L. 101-508, Sections 4206 and 4751) requiring nursing homes and hospitals to educate patients concerning advanced directives will doubtlessly have a large impact on this problem, other very

significant barriers to the achievement of the conditions in question remain:

1. The difficulty of constructing living wills/patient directives that address explicitly all the contingencies under which life-sustaining intervention would be deferred.
2. The difficulty in assuring that the document is both known to exist and at the right place at the right time. This is particularly problematic when cardiopulmonary resuscitation is the intervention in question.
3. Inconsistent definitions of "life-prolonging interventions" and "ordinary comfort measures" between patients, their surrogate decision-makers, lawmakers, and medical care providers.

These difficulties suggest the first empirical question to be addressed in the analysis that follows, i.e., the possibility that living will legislation may so far have had a very limited direct role in assuring that day-to-day bedside decisions concerning ANH as well as other forms of life-sustaining intervention are guided by lawful, patient executed directives. A more likely possibility and second empirical question to be considered is the indirect influence of living will legislation as an official expression of public policy that individuals (or surrogate decision-makers on their behalf) have the right to impose *certain limits* on medical intervention. As noted, in some states the limits of intervention are inclusive of ANH and in other states not, and little is known about how these policy variances correspond to the behavior of providers responsible to these statements of public policy.

The analysis that follows addresses both of these questions. First, the extent to which the language and intentions expressed in living will legislation actually correspond to the presence and influence of living will documents in bedside decisions is investigated. The policies and practices identified by nursing homes representatives concerning ANH withdrawal are then analyzed in relationship to official public policy.

DATA, ANALYSIS, AND FINDINGS

Data concerning decisions relating to the withdrawal or withholding of ANH in nursing homes are not readily produced. This is due both to issues of patient confidentiality and the level of public controversy concerning decisions to withdraw or withhold ANH. Like Watts, Cassel, and Hickam (1986), this investigation circumvents some of these problems by use of hypothetical cases where the efficacy of ANH is questioned as a means of obtaining information about policies, practices, and attitudes from nursing home directors of nursing service. It is argued here that directors of nursing service, because their role entails a convergence of clinical competence and immediate administrative authority, are in the best position of any single nursing home respondent to predict decision-making outcomes related to the withholding or withdrawal of ANH. To obtain data, 140 nursing home director's of nursing service (DNS's) were interviewed[3] and requested to provide both structured and qualitative responses to four case vignettes in which the withdrawal of ANH was proposed *with the high probability that death would occur as a result*. After each case was described, the DNS respondent furnished a judgement as to whether their facility would permit the withdrawal of ANH and also the reasons for the response given. All interviews were completed by telephone over a six week period during April-May of 1990, one month prior to the Supreme Court decision on *Cruzan v. Harmon*.[4]

In order to avoid potentially confounding influences of age and sex, the four case vignettes each described a female nursing home resident inferred to be elderly. References to race, ethnicity, and financial characteristics were also excluded. The cases described varied by two dimensions: salience of self-determination and inferred quality of life. Two of the vignettes described patients who were both competent and had executed a directive demanding the withdrawal of ANH (salience of self-determination), while two were described as incompetent and had family speaking for them. Concerning inferred quality of life, one patient was described as bed bound, in constant pain, and recently unable to engage in the few activities she valued, while a second case described a patient in an irreversible coma with underlying dementia. The two vignettes with a higher quality of life inferred were described as well adjusted, pain free and capable of enjoying a number of activities free of assistance.

Sampling Method. The nursing homes randomly selected for interviews were stratified by state and form of ownership. Three states with a large and diverse nursing home industry were sampled having very different public policies in the form of living will legislation pertaining to the permissibility of withdrawing ANH; Minnesota, Wisconsin, and Indiana. In addition, none of the three states sampled had either appellate litigation decided or other laws in force contrary to the language of their living will legislation on the issue of withdrawing ANH (SRTD, 1989; SRTD, 1991).[5]

Living will legislation in Minnesota, as the permissive case, allows competent nursing home residents to refuse ANH as an issue of self-determination and requires health care providers to honor living wills which articulate a similar wish in the event the patient is incapacitated (Minnesota Adult Health Care Decisions Act, 1989). Wisconsin living will legislation, by way of contrast, explicitly excludes ANH as a form of medical intervention that may either be refused or withdrawn where death would result (Wisconsin Natural Death Act, 1985). Indiana, as the middle case, is among several states that define ANH as "comfort care," which leaves its withdrawal based on judgements as to its role in either alleviating or prolonging suffering (Indiana Living Wills and Life-Prolonging Procedures Act, 1985).

Although the principle questions concern the influence of state living will legislation over bedside decisions, nursing homes were sampled by several ownership categories reflecting the structure of the nursing home industry, religious affiliation, and other related organizational characteristics. The role of religious affiliation was a seemingly obvious source of influence over decisions of this nature, and there is a significant body of research devoted to the question of whether patient care policies and practices are influenced by nursing home ownership (O'Brien, Saxberg, and Smith, 1983; Ullman, 1987). Other potentially significant control variables involving the individual characteristics of the nursing homes sampled were based on data obtained from the Health Care Financing Administration (HCFA, 1990). These data included

whether the nursing home was located in an urban or rural area, the influences of financial and patient acuity casemix, size, and general quality of care as measured by the licensing standard violations.[6] Of the suggested control variables, only religious affiliation showed no relationship to the likelihood of ANH withdrawal in preliminary analysis and was therefore omitted from subsequent analysis.[7]

Analysis and Findings. The first question investigated, whether living will documents themselves appear to have played any significant role in bedside decisions to withdraw or withhold ANH, appears to have a clear answer. Only one nursing home DNS out of the 140 interviewed reported a decision on the withdrawal of ANH that was guided by the patient executed life support directive. However, it should be stressed that this investigation occurred several months prior to the implementation of very recent federal legislation requiring hospitals, HMO's, home health agencies, and nursing homes to implement procedures promoting patient participation in executing extraordinary life-support directives.[8] At the time of the investigation, only one half of the nursing homes interviewed had procedure in place for regularly obtaining written directives from their patients, despite the frequency of life-sustaining intervention decisions made among the nursing home population. This first finding underscores the wisdom and necessity of at least this instance of federal intervention.

The second question, whether the language of state living will legislation concerning the withdrawal/withholding of ANH appears to correspond to bedside policies and practices among nursing homes, involves a more elaborate analysis that also leads to a negative finding. At the conclusion of each case vignette described, the DNS respondent was requested to predict the most likely of three possible outcomes to the demand that ANH be withdrawn: that ANH would be continued as long as the patient was a resident of their facility, that withdrawal would require legal sanction in the form of a court order, or that ANH withdrawal would occur independently of any outside legal sanction. If bedside decision-making were to correspond to the language of state living will legislation, we would expect nursing homes in Minnesota to readily permit the withdrawal of ANH, Wisconsin to be very restrictive of such decisions, and Indiana to be somewhere in the middle between these two extremes.

In fact, the distribution of responses on Table 3 paint a very different picture from this. Responses to all four cases show Wisconsin nursing homes as unlikely as nursing homes in Minnesota to continue artificial nutrition and hydration over the objections of patients or their families, while Indiana nursing homes were *relatively* more restrictive in their responses. Of particular significance is the finding that nursing homes in all three states were much more likely than not to discontinue ANH in each case described, usually without outside legal sanction. When patients were described as incompetent and without a living will, however, it was much more likely that legal sanction would be identified as a precondition to ANH withdrawal. If the restrictive language of the Wisconsin living will legislation on the issue of ANH has any influence over nursing home policies and practices at all, it appears that it may be reflected in the relatively higher likelihood that external legal sanctions would be required among Wisconsin nursing homes than those in Minnesota.

The final step in the analysis of nursing home responses involved a multivariate analysis of state location effects controlling for nursing home characteristics on the likelihood that nursing homes would require the continuation of ANH in the four cases described. The effect of state location over the likelihood that external legal sanction would be required as a precondition to withdrawal was also assessed controlling for individual nursing home characteristics. Control variables included in the multivariate analysis were selected by two criteria, their frequent reference in the large comparative literature on nursing home policies and practices and correlation with the dependent variables observed in preliminary data analysis. Because the outcomes of interest are dichotomous events influenced by a number of discrete independent variables, the method of analysis used was maximum likelihood logistic regression (Hanushek and Jackson, 1977). To simplify the presentation, Table 4 shows a series of logistic regression models in which all of the independent variables are entered simultaneously and nonsignificant ($p > .10$) coefficients are not reported. The logit coefficients are analogous in their interpretation to OLS regression coef-

Table 3. Distribution of Decision Outcomes by Case Circumstances and State

N=560

	n	Case 1 Competent With Directive Higher L.Q.			Case 2 Competent With Directive Lo L.Q.			Case 3 Incompetent Fam. Decision Higher L.Q.			Case 4 Incompetent Fam. Decision Lo L.Q.		
		Mn	Wis	Ind	Mn	Wis	Ind	Mn	Wis	Ind	Mn	Wis	Ind
Outcome 1 Continue ANH	134	6	8	16	4	5	14	13	9	19	10	10	20
	24%	13%	16%	35%	9%	10%	30%	29%	19%	41%	22%	20%	43%
Outcome 2 D/C ANH, Legal Sanction Required	177	3	15	7	4	15	10	13	27	16	21	27	19
	32%	7%	31%	15%	9%	31%	22%	29%	55%	35%	47%	55%	41%
Outcome 3 D/C ANH, Legal Sanction Not Required	249	36	26	23	37	29	22	19	13	11	14	12	7
	44%	80%	53%	50%	82%	59%	49%	42%	27%	24%	31%	24%	15%
n		45	49	46	45	49	46	45	49	46	45	49	46

ficients, except that the logit coefficient represents the effect on the log odds of the dependent variable occurring estimated by a unit change in the independent variable.

It is readily apparent from Table 4 that state location effects both matter and remain in the direction observed in Table 3, even when individual characteristics of the nursing home provider are considered. Surprisingly, the type of nursing home ownership appears to exert a consistent and significant influence over both the likelihood that continuation of ANH will be required and that external legal sanction will be a precondition to its withdrawal. In seven of the eight decision models assessed (two dichotomous outcomes for each case), nursing homes that were affiliated with large corporate chains were more disposed to invoke the more restrictive response as shown by the large and positive logit coefficients. Although the financial casemix coefficients are much larger and appear to influence the likelihood of outcomes in two of the four cases, they are not directly comparable in their effects to ownership and state location coefficients and appear relatively unimportant.[9] Except for one case in which nursing home size (number of beds) significantly influenced the likelihood that ANH would be continued, the other control variables identified in preliminary analysis as potentially significant were washed out in multivariate analysis.

DISCUSSION

The basic interpretation of the results shown in Table 4 is that other things being equal, nursing ownership appears more predictive of the likelihood of ANH withdrawal. In particular, it appears relatively more likely that residents of large propriety nursing home chains may have difficulty exercising their autonomy in the refusal of artificial nutrition and hydration than residents of other types of facilities. This is a significant finding if it is considered that care in nursing homes owned by proprietary chains has become the mode throughout much of the United States; by the mid-1980's approximately 50 percent of the nursing home beds in the U.S. were under this form of ownership (NCHS, 1987).

Another, perhaps more significant finding, is that independent of

Table 4. Logit Coefficients for Significant Predictors, Controlling for Other Model Variables

	Case 1		Case 2		Case 3		Case 4		
	Continue ANH	Snc D/C	Continue ANH	Snc D/C	Continue ANH	Snc D/C	Continue ANH	Snc D/C	Tot. Sig.
State									
Minn.	-1.267*	-	-	-1.894**	-	-	-	-	2
Wis.	-1.548**	-	-1.638**	-	-2.101***	-	-1.634**	-	4
Owner.									
Profit									
Independ.	-	-7.466*	-	-	-	-	-	-	1
Sm. Chn.	-	-	-	-	-	2.233**	-	-	1
Med. Chn.	-	-	-	-	-	-	1.412*	-	1
Lrg. Chn.	1.368*	2.128**	1.511*	-	2.065***	1.720**	1.514**	1.176*	7
Nonprof.									
Govern.	-	-	-	-	-	1.876**	-	1.933**	2
Vol. Chn.	-	-	-	-	-	-	-	-	0
Rur./Urb.									
SMSA	-	-	-	-	-	-	-	-	0
Casemix									
% Private	-	-	-	-	6.063**	-	6.104**	-	2
% Medicd.	-	-	-	-	5.884*	-	5.553**	-	2
% Hi Care	-	-	-	-	-	-	-	-	0
Size									
Lic. Beds	-	-	-	-	.006**	-	-	-	1
Quality									
Citations	-	-	-	-	-	-	-	-	0
Intercept	-3.133	-.392	-5.545*	.138	-7.196**	-.373	-6.829**	1.029	3

Model Chi-Sq.	123.98	83.44	95.94	111.86	135.50	112.63	137.90	101.80
df	14	14	14	14	14	14	14	14
Model p=	.09	.00	.01	.16	.00	.06	.00	.03
%Predicted	79.29	82.73	84.29	76.07	76.43	70.71	73.57	75.00

Note: Reference categories are voluntary independent ownership, Indiana, and the proportion of medicare pay residents. "Snc D/C" refers to court sanctioned ANH withdrawal.

- =p>.10, variable included in model but omitted from table.
* =p<.10
** =p<.05
***=p<.01

legislation to the contrary and in absence of Supreme Court precedent setting, nursing homes were found to be highly disposed toward discontinuing life sustaining artificial nutrition and hydration under a variety of circumstances where requested by a resident or family member. The least likely circumstances where the withdrawal of artificial nutrition and hydration was considered permissible turned out to be the sadly common situation of an elderly hopelessly comatose nursing home resident without a living will or durable power of attorney. Even in this situation, 70 percent of nursing homes sampled stated they would withdraw artificial nutrition and hydration if requested by the family and 24 percent indicated they would do so without any other form of legal sanction. These findings suggest that states and regulatory agencies that presume a definition of artificial nutrition and hydration as "basic care" that cannot be withheld or withdrawn under any circumstances will need to take very clear and aggressive actions to enforce what seems to be a largely unsupported public policy.

NOTES

1. Opponents to the withdrawal or withholding of ANH typically refer to the special indignity and suffering made necessary when a person "starves to death" or "dies of thirst." However, terminal care experts argue that this is not an accurate assumption (Zerwekh, 1983). Interestingly enough, the efficacy of discontinuing artificial respiration as a matter of principle has been widely accepted for years despite the reality that sedation to avoid distress and suffering by the patient is sometimes required as a consequence. This suggests that the inhibitions concerning the withholding or withdrawal of ANH originate from normative considerations rather than medical ones.

2. The petitioners in this case were the parents of Nancy Cruzan, a young woman in an unarguably permanent vegetative state for years sustained by artificial nutrition and hydration. The Supreme Court denied the petition based on the argument that the State of Missouri had a legitimate interest in demanding rigorous standards of "clear and convincing" proof that an action to discontinue ANH and thus end Nancy Cruzan's life would be consistent with her wishes. Following the Supreme Court decision the parents repetitioned the originating court with new evidence of their daughter's wishes (in the form of testimony from additional friends of Nancy Cruzan who had not previously come forward). Also, the State of Missouri dropped their former opposition to the withdrawal of ANH as a matter of principle and did not re-enter the case. The petition was granted by the originating court and Nancy Cruzan died several days following the withdrawal of ANH.

3. Of 192 facilities selected by stratified random sample, 140 had DNS's that agreed to participate. Refusals to participate were correlated with types of nursing home ownership rather than state location. In general, DNS's from nursing homes having large corporate forms of ownership were less likely to agree to be interviewed.

4. It was considered critical to conclude the interviews prior to the announcement of the *Cruzan v. Harmon* decision, since it appeared likely that the clear statement expected by the Supreme Court on the efficacy of ANH withdrawal would confound any influences attributable to state living will legislation. As it happened this may not have been the case; both the majority opinion and the decision itself left a great deal open to individual interpretation, with advocates on both sides of the issue claiming victory.

5. Wisconsin, since the time of the investigation, has implemented a "durable power of attorney for health care" which permits the withdrawal or withholding of ANH. Although this measure is directly contrary to the language of the Wisconsin living will legislation prohibiting the withdrawal of ANH, its creation is consistent with findings of this study suggesting that Wisconsin nursing homes are actually disposed to withdraw ANH under a variety of circumstances.

6. Since the unit of analysis was the nursing home, several potential sources of influence were considered in addition to ownership which may contribute to differences in the patient care policies and practices of interest. Urban-rural differences were considered because normative innovation and adaptation, in this case policies and practices in response to growing concerns about the limits of unwanted medical intervention, tend to diffuse more slowly in rural areas (Morrill, Gaile, and Thrall, 1988). In addition, the large literature devoted to investigating differences in patient care practices among nursing homes typically considers financial casemix, patient acuity, size, and some indicators of quality (O'Brien, Saxberg, and Smith, 1983; Ullman, 1987). The measure of patient acuity employed was the proportion of patients requiring assisted eating, which is a fundamental activity of daily living function that reflects the need for assistance in other areas as well (Weissert and Cready, 1989).

7. Religious affiliation did not appear to predict the decision-making outcomes concerning the withdrawal of ANH due to great variation within the denominational classifications used (Catholic, liberal protestant, and conservative protestant homes). This is not to say that religion is not significant to these decisions. For one thing, Jewish homes were not included in the sample, and DNS's often cited religious reasons for their views. A more discrete and comprehensive categorization of religious affiliation may have discovered strong religious affiliation effects.

8. The Omnibus Budget Reconciliation Act passed by Congress November of 1990 (Public Law 101-508, sections 4206 and 4751) makes Medicare and Medicaid funds to hospitals, HMO's, home health agencies, and nursing homes contingent upon the maintenance of policies and procedures that assure newly admit-

ted or enrolled patients are informed of their rights *under applicable state laws* to make their own health care decisions and refuse unwanted medical intervention. Included in this legislation is the requirement that providers document on the medical record whether or not patients have executed an advanced directive. The effect of this law, while it encourages the execution of advanced directives and promotes consideration of patient autonomy, falls short of dictating to states and providers a position that all forms of medical intervention (including artificial nutrition and hydration), can be refused. States are permitted to enact their own laws pertaining to the conditions under which medical intervention can be refused, including caveats which protect providers refusing to withhold medical intervention based on issues of conscience.

9. Nursing home patients were classified by the HCFA data according to three financial categories, Medicare, Medicaid, and private pay. Because these three categories were both exhaustive and mutually exclusive, the proportion of patients in the nursing homes in any of the three categories could not be treated as a continuous variable, therefore an omitted category was required. As an additional wrinkle, a change in the proportion in any one of the three financial categories caused a change in the proportion of the others, which had an inflationary effect on the magnitude of the coefficients.

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