Factors Associated with Physician Decision-Making in Starting Tube Feeding

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ABSTRACT

Background: Because tube-feeding decisions are sometimes difficult, we examined physician, institutional, and patient factors associated with these decisions.

Methods: Primary care physicians ($n = 388$) likely to manage nursing home patients in Hawaii were surveyed. Respondents indicated the factors of great importance in tube feeding decisions based on a vignette of a poststroke patient failing to thrive and family disagreement with advance directives. χ^2 and multiple logistic regression analyses were used to examine associations between physician demographics and factors of importance to physicians and their decisions based on the vignette.

Results: Starting tube feeding (chosen by 31% of respondents) was associated with internal medicine specialty (odds ratio [OR] 2.5, 95% confidence interval [CI] 1.4–4.6), and placing great importance on family preference (OR 5.4, 95% CI 3.0–9.8) and liability (OR 2.5, 95% CI 1.3–4.8). After 3 months without improvement, 58% chose to withdraw tube feeding. Continuing tube feeding was associated with placing great importance on family wishes (OR 3.0, 95% CI 1.8–5.1) and liability (OR 1.7, 95% CI 1.0–2.9). Placing great importance on the living will was associated with decreased likelihoods of starting (OR 0.1, 95% CI 0.04–0.3) and continuing (OR 0.1, 95% CI 0.04–0.3) tube feeding.

Conclusions: The decision to start or withhold tube feeding is associated with the individual physician's perception of the importance of patient wishes versus family wishes and liability concerns. Physician awareness of the influence of these factors on medical decisions may improve the decision-making process.

INTRODUCTION

TUBE FEEDING DECISIONS in elderly patients with advanced disease can be challenging and complex. Physicians often make these decisions when prognosis is uncertain, with little guidance from the literature, yet this decision making process is poorly understood. The principle of autonomy promotes making decisions consistent with the patient's wishes, but family preferences may disagree. Advance directives, initially viewed favorably by almost all physicians,¹

seldom alone dictate the goals and plans of care,^{2–4} particularly when improvement is possible. Physicians have multiple factors, both internal and external, influencing their decisions, but these might not be valued equally by all physicians. Increased understanding of how physicians' perceptions affect their treatment choices will clarify the medical decision-making process at the end of life.

Physicians' end of life treatment preferences have been associated with physician ethnicity, religion, age, and personality style,^{5–13} while other studies have

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found associations between treatment decisions and patient or institutional factors.^{10,14,15} Physician ethnicity was associated with tube feeding decisions,¹⁶ and patient and institutional factors associated with tube feeding in nursing home patients have been identified in previous observational studies.^{17–20} However, the physicians' perception of the importance of these factors in tube-feeding decision-making has not been examined.

Hawaii has one of the highest rates of tube feeding in nursing home patients in the nation, and one of the highest rates of advance directive completion in the nation.^{21,22} These rates contrast with the inverse relationship between tube feeding and advance directive completion in nursing home patients seen nationally.^{17,20,22} The cosmopolitan population of patients in Hawaii differs from the rest of the United States, and comprises 24% white; 23% Hawaiian, part Hawaiian, or other Pacific Islander; 17% Japanese; 14% Filipino; 5% Chinese, with additional groups (African American, Hispanic, Korean, other Asian, and others) comprising less than 2% each.²³ Hawaii's physicians are also very ethnically diverse.

The purpose of this study was to examine the role of physician demographics and physician value of factors in decisions regarding starting and continuing tube feeding, using a case vignette with uncertain prognosis. Given the literature on end-of-life decision-making, it was hypothesized that the physician's decision to start and continue tube feeding would vary with physician age, ethnicity, gender, and religion. It was also expected that the physicians' factors of great importance in this decision would differ based on the physician's choice in the vignette.

METHODS

The study design was a cross-sectional survey of physician preferences in response to a hypothetical clinical vignette.

Study subjects

The target population was physicians who provide primary care to adult patients in Hawaii, including internal medicine, family medicine and general practice physicians. This group was selected as most likely to provide primary care to nursing home patients. The study was approved by the Institutional Review Board of the University of Hawaii with consent implied by return of the survey. Questionnaires were mailed to 806 physicians identified from the Hawaii Medical Asso-

ciation's physician directory. A second mailing was sent to non-responders after two weeks. Telephone reminders were also made.

Measurement

The survey instrument was developed by several of the authors, based on the tube-feeding literature, to investigate the relationship between physicians' tube-feeding decisions and physicians' perceptions of factors associated with tube feeding. The survey consisted of three parts, and is included as Appendix A. Part I obtained the physician's demographic information. Part II asked the physicians if they would start tube feeding based on a patient vignette. Part III presented preference, physician personal, patient, and situational factors (associated with tube feeding in prior literature)^{17–20} and asked the physician to rate the importance of each factor in their decision to withhold or withdraw tube feeding on a three-point Likert scale.

Statistical analysis

The first outcome variable was created by dividing physician respondents into two groups based on their decision from the clinical vignette (start versus non-start). The predictor variables were physician demographics and the factors given great importance by the physicians (the percentage of physicians indicating the highest rating (3 = great importance) on the three-point Likert scale). χ^2 and Fisher's exact tests compared the starters and nonstarters by predictor variables. Multivariate analysis of physician demographic variables and physician value factors was performed on all factors with significance ($p < 0.05$) on univariate analyses. Subgroup analysis of physician value factors by physician age used chi square and Fisher's exact tests.

The second outcome variable was created by dividing physician respondents into two groups (continue versus discontinue) based on their response to the second question in the clinical vignette ("Would the physician continue tube feeding after 3 months with no change in the situation?"), and the analyses were repeated. Several variables were created for the purposes of analysis due to small numbers in categories: "Other" categories were created for ethnicity (21% of physicians indicated ethnicities which individually equaled less than 6% of the respondent population), and religion (26% of physicians indicated religious affiliations that individually equaled 6% or less of the respondent population); employed practice type included (110, 28%) and "other" (16, 4%); and general practice specialty included general practice (31,

8%), and “other” (28, 7%). All analyses were done using SAS software version 9.1 (Cary, NC).

RESULTS

There were 806 questionnaires sent to physicians: 388 (48%) were returned, of which 346 (89%) completed all data fields. Table 1 lists the characteristics of the responding physicians. In response to the clinical vignette, 31% of physicians indicated that they would start tube feeding, and after 3 months without improvement in the scenario, 42% of the physicians indicated that they would continue tube feeding.

There were significant differences on χ^2 analysis between the two groups in all 4 categories of factors ranked as very important by the physicians (Table 2). Factors associated with an increased likelihood of starting tube feeding, controlling for all significant variables (Table 3), included internal medicine specialty (compared with family medicine, general practitioners, or other specialties; OR 2.5, 95% CI 1.4–4.6), and placing great importance on family preference (OR 5.4, 95% CI 3.0–9.8), and liability concerns (OR 2.5; 95% CI 1.3–4.8). Placing great importance on the patient’s preference on living will was associated with a decreased likelihood of starting tube feeding in the vignette (OR 0.1; 95% CI 0.04–0.3).

TABLE 1. DEMOGRAPHIC CHARACTERISTICS AND PRACTICE PROFILES OF PHYSICIANS GROUPED BY TUBE-FEEDING DECISION BASED ON VIGNETTE

Variables, n (%) ^a	Start n = 122 (31%)	Nonstart n = 266 (69%)	p value	Continue n = 164 (42%)	Discontinue n = 224 (58%)	p value
Demographics						
Gender						
Male	84 (69)	194 (77)	0.13	118 (72)	160 (76)	0.45
Female	37 (31)	59 (23)		45 (28)	51 (24)	
Marital status						
Married	95 (78)	185 (70)	0.09	126 (77)	154 (69)	0.08
Not married	27 (22)	81 (30)		38 (23)	70 (31)	
Age (years)						
Under 40	34 (28)	72 (27)	0.96	50 (30)	56 (25)	0.38
40–59	72 (59)	161 (61)		92 (56)	141 (63)	
60+	16 (13)	33 (12)		22 (13)	27 (12)	
Ethnicity						
White	35 (29)	98 (37)	0.06	44 (27)	89 (40)	0.007
Japanese	31 (25)	49 (18)		41 (25)	39 (17)	
Chinese	21 (17)	32 (12)		31 (19)	22 (10)	
Filipino	16 (13)	24 (9)		18 (11)	22 (10)	
Other ^b	19 (16)	63 (24)		30 (18)	52 (23)	
Religious affiliation						
Catholic	28 (23)	60 (23)	0.51	38 (23)	50 (22)	0.06
Protestant	28 (23)	82 (31)		42 (26)	68 (30)	
Buddhist	13 (11)	23 (9)		22 (13)	14 (6)	
Atheist ^c	16 (13)	36 (14)		16 (10)	36 (16)	
Other ^d	37 (30)	65 (24)		46 (28)	56 (25)	
Practice type						
Private	80 (66)	140 (53)	0.04	102 (62)	118 (53)	0.17
Employed	34 (28)	92 (35)		47 (29)	79 (35)	
Trainee	8 (7)	34 (13)		15 (9)	27 (12)	
Specialty						
Internist	90 (74)	150 (56)	0.005	113 (69)	127 (57)	0.03
Family Med	19 (16)	70 (26)		34 (21)	55 (25)	
General Pract	13 (11)	46 (17)		17 (10)	42 (19)	

Bolded values indicate $p < 0.05$.

^aNot all subgroup totals equal the total numbers under decision groups due to missing values; percentages may not add up to 100% due to rounding.

^bOther category for ethnicity included “mixed” (23, 5.9%) Hawaiian, part-Hawaiian or Pacific Islander (21, 5.4%), unknown (15, 3.9%), Korean (6, 1.5%), African-American (4, 1%), Indian (3, 0.8%), Vietnamese (3, 0.8%), and less than 0.5% of the physicians indicating several other ethnicities.

^cAtheist and agnostic.

^dOther category for religion included Other (12%), unknown (6%), Jewish (3%), and multiple other religions written in by 6% of the responding physicians (all less than 2%).

TABLE 2. PHYSICIAN RATING OF FACTORS OF GREAT IMPORTANCE GROUPED BY TUBE-FEEDING DECISION BASED ON VIGNETTE

<i>Factors of great importance</i>	<i>Start n = 122 (31%)</i>	<i>Nonstart n = 266 (69%)</i>	<i>p value</i>	<i>Continue n = 164 (42%)</i>	<i>Discontinue n = 224 (58%)</i>	<i>p value</i>
Preference factors						
Verbal to physician	105 (88)	241 (96)	0.008	137 (90)	192 (96)	0.03
On living will	95 (80)	239 (95)	< 0.001	125 (82)	193 (97)	< 0.001
Family preference	65 (55)	49 (20)	< 0.001	66 (44)	45 (23)	< 0.001
Physician factors						
Religious beliefs ^a	29 (24)	36 (14)	0.02	33 (22)	26 (13)	0.04
Patient factors						
Reversible prognosis	61 (53)	159 (64)	0.04	79 (53)	128 (66)	0.02
TF under 3 months	33 (29)	38 (16)	0.006	33 (22)	35 (18)	0.41
Patient aged 65–74 ^b	20 (18)	24 (10)	0.04	24 (16)	18 (9)	0.07
Bedridden	59 (50)	117 (48)	0.65	67 (45)	95 (48)	0.62
Severe suffering	86 (74)	181 (73)	1.00	106 (72)	151 (76)	0.38
Advanced dementia	77 (66)	154 (63)	0.58	95 (64)	122 (62)	0.73
Prognosis <6 months	74 (64)	149 (61)	0.56	95 (64)	117 (60)	0.48
External factors						
Liability concerns	62 (52)	69 (28)	< 0.001	66 (43)	52 (26)	< 0.001
Nurse cooperation	28 (24)	37 (15)	0.04	27 (18)	30 (15)	0.56
Colleague opinion	36 (31)	43 (17)	0.004	39 (26)	34 (17)	0.05
Administration cooperation	27 (23)	36 (15)	0.06	26 (17)	29 (15)	0.55
Ethics committee	50 (42)	89 (36)	0.23	56 (38)	73 (37)	0.89
Cost	13 (11)	36 (14)	0.41	15 (10)	31 (16)	0.15

Bolded values indicate $p < 0.05$.

Each value is compared to ratings of “little/no importance” or “some importance.”

^aGreat importance of physician’s own religious beliefs as a factor in tube feeding decision.

^bCompared to patient age ≥ 75 years.

TF, tube feeding.

TABLE 3. ASSOCIATION OF PHYSICIAN DEMOGRAPHIC VARIABLES AND FACTORS OF GREAT IMPORTANCE WITH DECISION TO START TUBE FEEDING AS THE OUTCOME VARIABLE

	<i>Univariate analysis</i>		<i>Multivariate analysis</i>	
	<i>Unadjusted odds ratio (95% CI)</i>	<i>p value</i>	<i>Adjusted odds ratio (95% CI)</i>	<i>p value</i>
Physician demographic factors				
Internal medicine	2.2 (1.4–3.5)	0.001	2.5 (1.4–4.6)	0.003
Private practice	1.7 (1.1–2.7)	0.02	1.3 (0.8–2.4)	0.32
Preference factors				
Verbal to physician	0.3 (0.2–0.8)	0.01	0.7 (0.2–2.3)	0.55
On living will	0.2 (0.1–0.4)	< 0.001	0.1 (0.04–0.3)	< 0.001
Family preference	5.0 (3.1–8.0)	< 0.001	5.4 (3.0–9.8)	< 0.001
Physician personal factors of great importance				
Religious beliefs	1.9 (1.1–3.3)	0.02	0.8 (0.3–1.7)	0.53
Patient factors of great importance				
Reversible prognosis	0.6 (0.4–1.0)	0.05	0.7 (0.4–1.3)	0.27
TF under 3 months	2.1 (1.2–3.6)	0.006	1.5 (0.7–3.3)	0.29
Patient aged 65–74 yrs	1.9 (1.0–3.7)	0.04	1.6 (0.7–3.8)	0.29
External factors of great importance				
Liability concerns	2.8 (1.8–4.3)	< 0.001	2.5 (1.3–4.8)	0.009
Nurse cooperation	1.8 (1.0–3.1)	0.04	0.6 (0.3–1.4)	0.27
Colleague opinion	2.1 (1.3–3.5)	0.004	1.3 (0.6–2.7)	0.52

Bolded values indicate $p < 0.05$.

TF, tube feeding.

TABLE 4. ASSOCIATION OF PHYSICIAN DEMOGRAPHIC VARIABLES, PATIENT OR EXTERNAL FACTORS WITH DECISION TO CONTINUE TUBE FEEDING AS THE OUTCOME VARIABLE

	<i>Univariate analysis</i>		<i>Multivariate analysis</i>	
	<i>Unadjusted odds ratio (95% CI)</i>	<i>p value</i>	<i>Adjusted odds ratio (95% CI)</i>	<i>p value</i>
Physician demographic factors				
White ethnicity	0.6 (0.4–0.9)	0.009	0.5 (0.3–0.9)	0.02
Internal medicine	1.7 (1.1–2.6)	0.01	1.4 (0.9–2.4)	0.18
Preference factors of great importance				
Patient's verbal preference to physician	0.4 (0.2–0.9)	0.03	1.1 (0.3–3.5)	0.90
On living will	0.2 (0.1–0.4)	< 0.001	0.1 (0.04–0.3)	< 0.001
Family preference	2.7 (1.7–4.3)	< 0.001	3.0 (1.8–5.1)	< 0.001
Physician personal factors of great importance				
Religious beliefs	1.8 (1.0–3.2)	0.04	1.4 (0.7–2.6)	0.35
Patient factors of great importance				
Reversible prognosis	0.6 (0.4–0.9)	0.02	0.7 (0.4–1.1)	0.13
Institutional factors of great importance				
Liability concerns	2.1 (1.4–3.4)	< 0.001	1.7 (1.0–2.9)	0.04

Bolded values indicate $p < 0.05$.

Factors significantly associated with continuing tube feeding after 3 months are listed on Table 4, and included white ethnicity (compared with all other physician ethnicities; OR 0.5, 95% CI 0.3–0.9), and placing great importance on the following: family pref-

erence (OR 3.0; 95% CI 1.8–5.1), liability concerns (OR 1.7; 95% CI 1.0–2.9) and patient's preference on living will (OR 0.1; 95% CI 0.04–0.3). Factors of great importance were compared for the three age groups of physicians in the survey (Table 5).

TABLE 5. CORRELATIONS BETWEEN FACTORS OF GREAT IMPORTANCE AND PHYSICIAN AGE

Factors of great importance	Age of physician			p value
	<40 years	40–59 years	60+ years	
Preference factors				
Verbal to physician	97 (93)	207 (95)	42 (88)	0.21
On living will	93 (89)	199 (91)	42 (89)	0.90
Family preference	23 (22)	77 (35)	14 (32)	0.06
Physician factors				
Religious beliefs	12 (11)	40 (18)	13 (28)	0.05
Patient factors				
Reversible Prognosis	59 (57)	140 (64)	21 (50)	0.16
TF < 3 months	18 (18)	40 (19)	13 (31)	0.18
Patient aged 65–74 ^a	9 (9)	23 (11)	12 (28)	0.004
Bedridden	44 (42)	110 (51)	22 (52)	0.31
Severe suffering	69 (66)	167 (77)	31 (72)	0.15
Advanced dementia	52 (50)	149 (69)	30 (71)	0.002
Prognosis <6 months	60 (58)	135 (63)	27 (61)	0.69
External factors				
Liability concerns	31 (30)	82 (38)	18 (38)	0.30
Nurse cooperation	8 (8)	39 (18)	18 (38)	< 0.001
Colleague opinion	20 (19)	45 (21)	14 (31)	0.24
Admin. cooperation	7 (7)	37 (17)	19 (41)	< 0.001
Ethics committee	38 (37)	81 (38)	20 (43)	0.70
Cost	9 (9)	25 (12)	15 (33)	< 0.001

Bolded values indicate $p < 0.05$.

^aCompared to patient age ≥ 75 years.

DISCUSSION

In this study, the physicians valued factors in all four categories (preferences, physician personal, patient, and external or situational) differently. These differences correlated with the physicians' decisions based on the vignette. The widest gaps between the decision groups were seen for great importance of family wishes (55% starters versus 20% nonstarters) and liability (52% starters versus 28% nonstarters).

The vignette's patient had an ambiguous prognosis, and the physicians made their decision in the setting of conflicting advance directives and family preferences. The majority of physicians in this survey chose both to withhold tube feeding and to withdraw tube feeding after 3 months without improvement. The confounding influences of patient and family wishes have been noted in previous studies^{5-7,10,15,24} and physicians often override the advance directives of patients.^{7,14} Even patients recognize that their families may not agree with their advance directives, and some prefer for their families' wishes to supersede their own.²⁵

Previous studies have noted that family discord is a very important factor in decision making for more legally defensive physicians,²⁶ supporting the association between great importance of liability concerns and family preferences with starting tube feeding. While Hawaii's legal statutes allow designated surrogate decision making regarding tube feeding, in the case of nondesignated surrogates, two physicians must document nonbenefit from tube feeding to withdraw or withhold.²⁷

The patient and institutional factors associated with actual tube feeding in nursing homes demonstrated considerable overlap in importance for both physician decision groups. Given previous literature,^{10,14} physicians who withheld or withdrew tube feeding might have been expected to value advanced dementia, bedridden status, or prognosis less than 6 months more, but differences were not seen between the decision groups. Several factors were less important to physicians than we expected from the literature, such as anticipated short duration of tube feeding and younger patient age.^{10,20} Subgroup χ^2 analysis revealed differences between younger and older physicians in the importance of younger patient age (65-74 years), the presence of advanced dementia, nursing and administrative cooperation and cost.

The associations between physician demographic factors and the decisions based on the vignette were also somewhat surprising. No associations between decision groups were seen for physician age, gender, or

marital status, in contrast to previous studies.^{5,6,11,28} No significant relationships were seen between physician age and importance of patient or family preference on subgroup analysis, in contrast to prior studies.^{6,11,24}

Similarly, the role of physician ethnicity was not as pronounced as we had expected. Although white physicians, compared to physicians of all other ethnicities, had a decreased likelihood of continuing tube feeding in this study, there was no correlation between physician ethnicity and the decision to start tube feeding, in contrast to other studies^{6,10,11} and this study's hypothesis. Asian physicians were almost 8 times more likely than white physicians to recommend percutaneous endoscopic gastrostomies (PEGs) in one study,¹⁶ but this was not found when an "Asian" category for ethnicity was created for this study's results, possibly related to the heterogeneity of an "Asian" category in Hawaii compared to other areas. The physicians' place of birth and other acculturation variables were not addressed in this study.

The finding that internal medicine specialists were more likely to start tube feeding in the scenario than the other physicians (family medicine and general practice) was unexpected and has not been noted in previous literature.^{16,28}

Strengths of the study

There has been little research examining the physician's decision to start or continue tube feeding in nursing home patients, and surveys are a valuable way to investigate attitudes, preferences and beliefs.²⁹ This survey specifically focused on tube feeding in a nursing home patient with an uncertain prognosis, exploring factors of importance to physicians making this medical decision, thus contributing to two areas needing more research. In addition, the physicians surveyed were of multiple ethnicities and cultural backgrounds, representative of the unique population in Hawaii. Our study included some little-studied ethnic groups such as Asians and Pacific Islanders.

Limitations of the study

The study had several important limitations. First, the design of the survey does not allow causal relationships to be reported, therefore, while the associations in this study are significant, it is not clear whether the factors of importance are a justification or a cause of the physicians' decisions. However, regardless of the direction, the strengths of the associations are significant and provide a greater description of the tube feeding decision. Second, the response rate was 48%,

and nonresponders' demographic information, preferences, and factors of great importance were not available. Nonresponder bias may contribute to the outcomes seen, although there were adequate numbers of physicians in both decision groups for analysis, and non-responders tend to be moderate in their decisions, citing lack of time as their reason for not responding.³⁰ Finally, surveys are simulation¹⁶ and may not represent actual clinical practice.

Clinical implications and future studies

Knowledge of physician biases affecting decision making is important when teaching palliative care to physicians-in-training. Greater self-awareness of physician values will help improve communication, both between providers and with patients and family members, which should improve shared decision making. Ideally, physicians will involve family early and throughout advance directive discussions, in order to clarify any tension between respecting patient wishes and family preferences, easing liability concerns. Increased understanding of the factors affecting medical decision-making is clearly needed, in order to improve overall quality of care at the end of life.

A follow-up survey study of physician attitudes would assist in determining if medical education is impacting physician awareness of this complex medical decision. Future surveys might use a more factorial vignette design to assess the relative importance of the various factors. Broadening the scope of focus to the attitudes of nursing home staff and other health care professionals may also provide important input.

CONCLUSION

The decision to start or withhold tube feeding in an elderly nursing home patient is a complex process affected by multiple factors. When faced with an uncertain prognosis and conflicting preferences, individual physician demographic characteristics and the physician's perception of the importance of the patient and family preferences were significantly associated with this decision. While many factors of great importance in this decision were overlapping for both groups, the starters appeared to value the input of the family and liability concerns more in their decision than nonstarters. Further study of physicians' perceptions may improve our understanding of how medical decisions are made at the end of life, particularly when the patient is not able to actively participate in the process.

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APPENDIX A: TUBE FEEDING SURVEY COMPONENTS USED IN STUDY ANALYSIS

PART I: Please check one that applies to you.

1. Age group	2. Gender	3. Marital Status	4. Race/ Culture
☐ <40 years	☐ Male	☐ Single	☐ Black
☐ 40–59 yrs	☐ Female	☐ Married	☐ Caucasian
☐ 60+ yrs		☐ Separated	☐ Chinese
		☐ Widowed	☐ Filipino
		☐ Divorced	☐ Hawaiian/Polynesian
			☐ Hispanic
			☐ Japanese/Okinawan
			☐ Korean
			☐ Mixed
			☐ Other (specify)
5. Religion	6. Practice Level	7. Specialty	8a. Do you have a subspecialty?
☐ Catholic	☐ Private practitioner	☐ Internal medicine	☐ Yes
☐ Protestant	☐ Employed physician	☐ Family Practice	☐ No
☐ Buddhist	☐ Physician in-training	☐ General Practice	8b. Specify
☐ Jewish		☐ Other (specify)	
☐ Agnostic			
☐ Other (specify)			
9. Location of practice	10. Island	11. Length of practice	12a. Have you provided primary care to nursing home patients?
☐ Urban	☐ Kauai	☐ <5 years	☐ Yes
☐ Rural	☐ Oahu	☐ 5–9 years	☐ No
	☐ Molokai	☐ 10–19 yrs	12b. If yes, how long?
	☐ Maui	☐ 20+ yrs	<5 years
	☐ Lanai		5–9 years
	☐ Hawaii		10–19 years
			20+ years

PART II: Please indicate the likelihood of your withholding or withdrawing tube feeding.

75 y/o, male, S/P CVA with residual global aphasia. He has inadequate oral intake and is losing weight. He *has a living will* stating that he does *not want* tube feeding. He does not have decision making capacity. His *family wants* tube feeding.

- a. Would you be likely to start tube feeding? ☐ Yes ☐ No

Same patient has feeding tube for 3 months. His oral intake remains inadequate.

- b. Would you be likely to continue tube feeding? ☐ Yes ☐ No

PART III: Using a 3-point scale, please indicate the importance of the following considerations in your decision to withhold or withdraw tube feeding.

1= little/no importance

2= some importance

3= great importance

FACTORS	WITHHOLD			WITHDRAW		
1. Age of the patient	1	2	3	1	2	3
a. 65–74 years (young old)	1	2	3	1	2	3
b. 75–84 years (middle old)	1	2	3	1	2	3
c. $\geq$ 85 years (old old)	1	2	3	1	2	3
2. The patient's physical function (activities of daily living and mobility)	1	2	3	1	2	3
a. poor function needing consistent assistance	1	2	3	1	2	3
b. bedridden needing custodial care	1	2	3	1	2	3
3. The patient's cognitive function (memory and thinking)	1	2	3	1	2	3
a. mild dementia	1	2	3	1	2	3
b. severe dementia	1	2	3	1	2	3
4. The patient's life expectancy	1	2	3	1	2	3
a. < 6 months	1	2	3	1	2	3
b. 6–12 months	1	2	3	1	2	3
c. 12 months– 2 years	1	2	3	1	2	3
d. > 2 years	1	2	3	1	2	3
5. The patient's prognosis (reversibility of underlying condition)	1	2	3	1	2	3
a. reversible	1	2	3	1	2	3
b. irreversible	1	2	3	1	2	3
6. The patient's degree of suffering (pain and discomfort)	1	2	3	1	2	3
a. severe and long duration	1	2	3	1	2	3
b. mild/moderate and long duration	1	2	3	1	2	3
7. Patient's preference as expressed to the physician	1	2	3	1	2	3
8. Patient's preference expressed in a Living Will	1	2	3	1	2	3
9. Family preference	1	2	3	1	2	3
10. Willingness of institutional staff to cooperate	1	2	3	1	2	3
a. nurses	1	2	3	1	2	3
b. administration	1	2	3	1	2	3
11. Duration of tube feeding	1	2	3	1	2	3
a. < 3 months	1	2	3	1	2	3
b. 3–6 months	1	2	3	1	2	3
c. > 6 months	1	2	3	1	2	3
12. Liability concerns	1	2	3	1	2	3
13. Feedback from ethics committee	1	2	3	1	2	3
14. Input from colleagues	1	2	3	1	2	3
15. Your religious beliefs	1	2	3	1	2	3
16. Medical cost of care	1	2	3	1	2	3

Thank you very much for your time and cooperation!