Emergency clinicians' attitudes and decisions in patient scenarios involving advance directives

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ABSTRACT

Introduction To identify the decisions and attitudes of emergency clinicians in hypothetical scenarios involving advance directives (ADs).

Methods An online survey distributed to members of the Australasian College for Emergency Medicine elicited decisions on commencing full treatment (CFT), limiting treatment or palliation in hypothetical clinical scenarios. Quantitative data were summarised using number and percentage.

Results 388 surveys yielded a 13.0% response rate, including 190 fellows (51.9%) and 176 trainees (48.1%). For a 75-year-old patient with major trauma and unknown comorbidities requiring laparotomy, most participants (355/365, 97.3%) chose CFT. When an AD limiting treatment was made available, CFT decreased substantially (63/364, 17.3%), and the modal response was palliation (175/364, 48.1%). The most frequently reported influential factor in this decision was ethical obligation (82/383, 21.4%). For an elderly nursing-home resident with dementia, metastatic cancer and possible septic shock, 10.7% (39/366) chose CFT, changing little (21/365, 5.8%) with a directive requesting full treatment. The patient's presentation and history (189/375, 50.4%) overrode legal obligations (14/375, 3.7%) in influencing the decision. For a 55-year-old man with prostate cancer, hypoxia and acute respiratory distress (potentially requiring ventilatory support) saying, 'I just want to end it all,' most (233/366, 63.7%) chose CFT. A directive requesting limitation resulted in fewer decisions on CFT (43/368, 11.7%). Clear documentation was most important (100/362, 27.6%) in influencing this decision.

Conclusion Hypothetical treatment decisions involving ADs made by emergency clinicians appear to be more influenced by ethical and clinical factors than by legal obligations.

INTRODUCTION

Emergency clinicians are involved in critical decisions about life-sustaining treatment, end-of-life care or palliation. This may occur with limited information regarding patients' histories, wishes or advance directives (ADs). Studies have demonstrated low prevalence in the community of ADs, that is, advance care plans (ACPs) or medical enduring power of attorneys (MEPAs).[1–3] ADs have been noted to have a positive effect on patients and relatives.[4 5] One study showed that the most recurring directive request was 'not for CPR'.[6] Being free of pain and not prolonging life in the setting of an incurable illness, injury or permanent change in quality of life are also common wishes.[7 8] Although interventions have been implemented to increase prevalence and, theoretically, compliance with patients' wishes, such as the 'Respecting Patient Choices©' program in some hospitals, the existence of an AD does not guarantee that its conditions will be met.[4]

Legal and ethical consequences can make doctors apprehensive when following the wishes of a patient or ADs.[1 3 9] Currently, there is no uniform legislation across Australia or New Zealand to guide clinicians on ADs.[10] Not all states and territories have statutes explicit to ADs, palliative care or the right to refuse treatment.[11–13] Existing legislations have inconsistent definitions of what constitutes palliative care or life-sustaining treatment, the conditions under which a patient is deemed incompetent, and the conditions for witnessing, storing and revoking a directive.

Lack of skills and minimal education may affect the prevalence of ADs among patients and contribute to poor adherence. Few studies have examined clinician-dependent factors affecting this issue. Our research broadly aimed to determine, in a sample of Australasian emergency medicine consultants (fellows) and trainees, the knowledge, perceptions and attitudes behind decision-making involving ADs. Specifically, we sought the response of these emergency clinicians to an online survey containing hypothetical scenarios, to determine the effect of ADs on resuscitation decision-making, comparing the responses of consultants and trainees, and the factors influencing these decisions.

METHODS

Study design

An online questionnaire was drafted by the authors and piloted on emergency clinicians at St Vincent's Hospital Fitzroy. It was then distributed to fellows and trainees by the Australasian College for Emergency Medicine (ACEM), using SurveyMonkey, from May 2010 for 6 weeks. The identities of participants remained protected.

The questionnaire comprised three sections: demographics, hypothetical scenarios and knowledge of ADs. Three scenarios were presented and then re-presented with the addition of an AD. In the third scenario, a further situational change was introduced. After each scenario, respondents were asked to identify the factor that most influenced their treatment decision. Questions involving scenarios and influencing factors elicited a closed (forced-choice) response as well as an opportunity to comment. The scenarios were designed to observe the treatment response after an AD was introduced and to create potential areas of conflict with patients, relatives and staff.

Population
The target population was 2992 members of ACEM residing in Australia or New Zealand at the time of the survey.

Sampling
The sample calculation was carried out using the formula of Naing *et al*.[14] In the absence of available data, we estimated that a maximum of 50% of respondents would choose 'commencing full treatment' (CFT) for the first scenario. This method is the most conservative approach when the response distribution is unknown. The minimum sample size required for estimating a 50% response distribution at a 95% confidence level and a 5% margin of error was 385. To meet the target sample size, a 12.8% response rate was required.

Further estimations of sample size were made for inferential analyses using SamplePower software. Two-by-three contingency tables with a small effect size (W=0.02) required a total sample of 260. Two-by-two contingency tables, with 170 per group (340 in total), would be required to detect a difference of 15% as significant. In all instances, α was set at 0.05 (two-tailed) and power at 0.80.

Outcomes
We sought to identify the number (%, 95% CI) of respondents who decided on CFT, palliation or limiting treatment in hypothetical scenarios, comparing CFT against the other limited treatment options. Comparisons were made between participant groups according to qualification (consultant vs trainee). Further, we wanted to determine the factors that influenced decision-making, perceptions, attitudes and prior knowledge of ADs.

Data collection and management
Data were entered into Microsoft Excel 2003 and analysed using IBM® SPSS® Statistics (V.15.0). Quantitative and categorical data were analysed using aggregate and percentage comparisons (number, %, 95% CI). Comparisons between consultants and trainees were made using Pearson's χ^2 analysis (for >2 decision outcomes) and Fisher's exact test for two-by-two contingency tables.

Ethics approval
Approval was obtained from the Low-risk Research Subcommittee of the Human Research Ethics Committee at St Vincent's Hospital Melbourne.

RESULTS
Demographics
The survey response rate was 13.0% (388 of 2992), including 190 fellows (51.9%), 176 trainees (48.1%) and 22 not reported. Table 1 shows the demographic characteristics of respondents. Percentages were calculated with denominators corrected for missing responses. The characteristics for qualification and location of work were comparable to available ACEM data.

Scenarios
Scenario 1: a 75-year-old patient with major trauma
Most participants (97.3%, 95% CI 95.0% to 98.6%), when presented with the first scenario [1a] involving a 75-year-old patient with major trauma and unknown comorbidities requiring laparotomy, indicated they would choose CFT, comprising 98.9% (95% CI 96.8% to 99.9%) of consultants versus 95.5% (95% CI 91.1% to 97.8%) of trainees.

When re-presented to include documentation of a recent MEPA limiting treatment [1b], the decision to choose CFT dropped substantially (17.3%, 95% CI 13.8% to 21.6%), with the modal response being palliation (48.1%, 95% CI 43.0% to 53.2%) followed by limiting treatment (table 2). In scenario [1b], 20.6% of consultants and 13.7% of trainees chose CFT. The most influential factor for a decision in scenario [1b] was ethical obligation, chosen by 21.6% of consultants (41/190, 95% CI 16.3% to 28.0%) and 21.8% of trainees (38/174, 95% CI 16.3% to 28.6%).

Scenario 2: a nursing-home resident with dementia, cancer and sepsis
In scenario [2a] where an elderly nursing-home resident with dementia, metastatic cancer and possible septic shock was presented, 10.7% (95% CI 7.8% to 14.3%) chose CFT, the majority selecting the limited treatment option. Significantly more trainees (15.9%) than consultants (5.8%; p≤0.002) chose CFT.

The proportion advocating CFT changed little with the introduction of a MEPA requesting full treatment (scenario [2b]). The decision to palliate decreased and more chose to limit treatment (table 3). Significantly more trainees (9.1%) than consultants (2.6%; p≤0.012) chose CFT.

Factors related to the patient's medical history (35.7%, 95% CI 31.1% to 40.7%) were selected by 34.2% of consultants and 37.1% of trainees, clearly overriding legal obligations (3.7%, 95% CI 2.2% to 6.2%) as most important in influencing decisions.

Scenario 3: a 55-year-old man with prostate cancer and respiratory distress
Scenario [3a] presented a 55-year-old man with prostate cancer, acute respiratory distress and hypoxia (potentially requiring ventilatory support) saying, 'I just want to end it all.' Most respondents (63.7%, 95% CI 58.6% to 68.4%) chose CFT, whereas a few chose palliation (table 4). When re-presented as scenario [3b], with the addition of an AD requesting no intubation or cardiac chest compressions, the proportion choosing CFT fell significantly to 11.7% (95% CI 8.8% to 15.5%). The

Table 1 Demographic characteristics of respondents

Characteristic	Eligible population n (%)	Total n (%)	Fellows n (%)	Trainees n (%)
Qualification (N*=366)	2992	366	190 (51.9)	176 (48.1)
Sex (N=365)	Data not available			
Male	—	201 (55.1)	118 (62.4)	83 (47.2)
Female	—	164 (44.9)	71 (37.6)	93 (52.8)
Mean years of membership with ACEM (years) (N=361)	Data not available	—	13	4
Mean age (years) (N=345)	Data not available	38.5*	43.4	33.1

*N, number of respondents who answered the question.
ACEM, Australasian College for Emergency Medicine.

Table 2 Treatment choice and responses by number (%) of fellows and trainees according to treatment choice for scenario 1 before and after presentation of an advance directive

Treatment choice	Total n (%)	Fellows n (%)	Trainees n (%)	p
Initial choice [1a] (N=365)				
CFT	355 (97.3)	188 (98.9)	167 (95.4)	0.05*
Palliation	1	—	1	
Limiting treatment	10 (2.7)	2 (1.1)	8 (4.6)	
After advance directive [1b] (N=364)				
CFT	63 (17.3)	39 (20.6)	24 (13.7)	0.21
Palliation	175 (48.1)	86 (45.5)	89 (50.9)	
Limiting treatment	126 (34.6)	64 (33.9)	62 (35.4)	

*p Value calculated using Fisher's exact test comparing CFT and combined: limiting treatment and palliation. All other p values were calculated using Pearson's χ^2 analysis.
CFT, commencing full treatment.

proportion limiting treatment increased following the AD. Clear and recent documentation was the most important factor influencing this decision (27.6%, 95% CI 23.3% to 32.5%, all respondents; 28.7% of consultants, 26.4% of trainees).

The proportion commencing full treatment increased considerably (27.5%, 95% CI 23.1% to 32.3%) when a relative stated 'please do everything' and expressed concern regarding the patient's possible depressed state (scenario [3e]). Significantly more consultants (32.1%) than trainees (22.5%; p=0.045) chose CFT. For trainees, the most influential factor was ethical obligation (22.0%, 95% CI 16.4% to 28.8%), whereas professional responsibility was chosen most by consultants (21.2%, 95% CI 16.0% to 27.6%). Overall, ethical obligation was the most influential factor affecting all respondents' decisions (21.3%, 95% CI 17.4% to 25.8%). Legal factors were included as influencing factors by only 42.1% (95% CI 37.2% to 47.3%) of respondents overall, whereas ethical obligations were included as influencing factors by 69.4% (95% CI 64.5% to 73.9%) of respondents.

Knowledge

Most respondents (71.3%, 95% CI 66.4% to 75.8%) had no prior education regarding ADs. Over one-fifth (22.6%, 95% CI 18.6% to 27.3%) of respondents never or rarely asked a patient's contacts if there was a MEPA and 24.8% (95% CI 20.7% to 29.6%) never or rarely asked a competent patient if they possessed an AD. Twenty-four per cent (95% CI 20.1% to 29.0%) of respondents stated that their hospital did not have a dedicated form to specify treatment limitations, and an additional 15.6% (95% CI 12.2% to 19.8%) were unsure. On average, 92.7% agreed that there should be a 'universal form and location' to indicate a patient's ACP and/or MEPA. Thirty per cent (95% CI 25.8% to 35.3%) of respondents did not know that a MEPA is not able to make decisions for a patient when the patient is competent. Deficiencies in knowledge were selected by respondents in the following areas: legal obligations 79.3% (95% CI 74.7% to 83.3%), access to documentation 61.5% (95% CI 56.3% to 66.5%) and factors related to the MEPA 45.2% (95% CI 40.0% to 50.5%). Ninety-four per cent (95% CI 91.5% to 96.4%) of respondents were happy to receive further education regarding ADs. Fifty-three per cent (95% CI 48.1% to 58.4%) believed that patients' general practitioners were the most appropriate to initiate discussions involving ADs, followed by 20.8% (95% CI 17.0% to 25.3%) who chose a dedicated multidisciplinary team.

Table 3 Number (%) of fellows and trainees according to treatment choice in scenario 2 before and after presentation of an advance directive

Treatment choice	Total n (%)	Fellows n (%)	Trainees n (%)	p
Initial choice [2a] (N=366)				
CFT	39 (10.7)	11 (5.8)	28 (15.9)	0.002
Palliation	109 (29.8)	67 (35.3)	42 (23.9)	
Limiting treatment	217 (59.3)	112 (58.9)	106 (60.2)	
After advance directive [2b] (N=365)				
CFT	21 (5.8)	5 (2.6)	16 (9.1)	0.012
Palliation	75 (20.5)	46 (24.3)	29 (16.5)	
Limiting treatment	269 (73.7)	138 (73.0)	131 (74.4)	

CFT, commencing full treatment.

Table 4 Number (%) of fellows and trainees according to treatment choice in scenario 3

Treatment choice	Total n (%)	Fellows n (%)	Trainees n (%)	p
Initial choice [3a] (N=366)				
CFT	233 (63.7)	129 (67.9)	104 (59.1)	
Palliation	24 (6.6)	9 (4.7)	15 (8.5)	
Limiting treatment	109 (29.8)	52 (27.4)	57 (32.4)	
After advance directive [3b] (N=366)				
CFT	43 (11.7)	27 (14.2)	16 (9.1)	
Palliation	59 (16.1)	26 (13.7)	33 (18.8)	
Limiting treatment	264 (72.1)	137 (72.1)	127 (72.2)	
After a relative's comment [3e] (N=360)				
CFT	99 (27.5)	60 (32.1)	39 (22.5)	0.045
Palliation	37 (10.3)	14 (7.5)	23 (13.3)	
Limiting treatment	224 (62.2)	113 (60.4)	111 (64.2)	

CFT, commencing full treatment.

DISCUSSION

Few studies have profiled the perceptions, attitudes and decisions of emergency clinicians involving ADs. This research showed that, in hypothetical scenarios, ADs alter the treatment decisions made by emergency clinicians. A large proportion of emergency clinicians had no previous education concerning ADs. Approximately a quarter of respondents indicated that they infrequently confirmed whether their patients held ADs. Emergency clinicians strongly support a uniform record across hospitals to adequately document patients' wishes and treatment limitations.

The effect of ADs was illustrated in our scenarios. The arrival of a MEPA requesting limited treatment for an elderly woman with major trauma resulted in a dramatic fall in the decision to choose CFT. Similarly, the addition of an AD substantially lowered the proportion commencing full treatment for a younger man with prostate cancer. Significant differences in end-of-life treatment decisions exist between consultants and trainees, possibly related to their differences in clinical experience in emergency medicine. Consultants appear less likely to provide full treatment in scenarios where patients do not want to be vigorously treated once their preferences are known.

The most influential factor in decision-making varied in each hypothetical scenario. Clinicians' perceived ethical obligations, patient comorbidities or sufficient documentation was most influential when taking a treatment decision. In each of the scenarios presented, legal factors were taken into consideration by almost half of the respondents; however, ethical and patient considerations consistently were listed higher in importance.

Other research theorised that decisions were more affected by concerns of litigation and criticism than by professional

judgement of medical benefit or futility.[15] As in our study, Detering *et al*[4] and Mower and Baraff[16] identified inadequate documentation, time constraints and minimal opportunities as contributing factors in current practice. Mower and Baraff[16] demonstrated that compliance increased when directives were highly explicit and had been previously formally discussed. Similarly, Foss *et al*[17] noted that professional responsibility and patient and conditional factors affected clinicians' decisions.[17] Hardin and Yusufaly[18] indicated that prognosis, quality of life, treatment outcomes and family preferences affected decisions. They also suggested that physicians' values may not ultimately reflect patients' preferences.[18]

Most literature focuses on interventions to increase directives in the community and on patient factors such as educational inadequacies. Despite strategies to improve these rates, only 7.9% of inpatients and 5% of residential care residents in Australia complete an AD.[19 20] Reportedly, both a structured AD form and a nurse who recruited and informed patients failed to increase compliance with patients' wishes, although other studies have reported different findings.[21] A US study showed that the prevalence of ADs was 85% after implementation of a specific program.[6] Locally, research showed that 23.1% of patients initially never considered ADs because they 'always wanted full treatment', whereas 68.5% reconsidered following education.[19]

Poor community knowledge may reflect poor education among medical staff. This study identified that, for a large proportion of responding emergency clinicians, previous education concerning ADs was inadequate. A similar situation has been described in intensive care units in Australia, where doctors lacked awareness, had a poor understanding of ADs and were uncertain in decision-making.[17 22] Also, 'most did not follow the request for palliation' made by the MEPA.[16] Hardin and Yusufaly's study[18] involving six hypothetical patient scenarios revealed poor compliance with ADs by physicians, reporting that 'decisions by faculty and residents were not consistent with the AD in 65% of cases.' These observations suggest that clinicians may be acting contrary to patients' wishes, and highlight the potential for unnecessary consumption of medical resources.

Acquiring information remains challenging, particularly for unknown patients. Weinick *et al*[23] stated that 'emergency clinicians experienced substantial difficulty in reliably obtaining information about ADs.' Our respondents listed clear and recent documentation as highly influential and strongly indicated their preference for a formalised system documenting patients' ADs. Clinical decision-making in emergency medicine differs from that in other specialties. In the emergency situation, major factors determining treatment decisions include patient competency and the likely utility or futility of invasive medical treatment. Other clinicians may have the benefit of more time, greater access to information, collateral history and the opportunity to have adequate discussions with the patient and next of kin. These other environments are often more conducive to making difficult end-of-life decisions, including the withholding or withdrawal of medical treatment. There is a need for further research to explore international practices and protocols, and comparisons between emergency and nonemergency doctors.

LIMITATIONS

The conclusions of our study are limited by sample size. Although we met our target sample size, with only 13% of the population of emergency consultants and trainees in Australasia choosing to respond to the survey, the responses may not have been representative of the population. There is the potential for nonresponse bias; those less likely to be influenced by ADs may have chosen not to respond to a survey about the topic.

Our findings are limited by the fact that this was an exploratory study. We chose not to provide too much background information on ADs as we were seeking to identify knowledge in the area; similarly, we did not define legal, professional and ethical responsibilities, as our framing of definitions may have influenced clinicians' choice of response according to our predetermined views and biases rather than representing their underlying sense of which factors motivated their decisions. We accept that there is likely to be significant blurring of the distinction between these categories for many emergency clinicians.

CONCLUSION

The complex treatment decisions by emergency clinicians in hypothetical end-of-life situations are affected by ADs and vary considerably according to the situation and seniority of the clinician. Emergency clinicians appear to make treatment decisions involving ADs on the basis of factors related to ethical and clinical considerations, patients' wishes and adequate documentation, more than simply legal considerations.

Competing interests None.

Ethics approval Human Research Ethics Committee at St Vincent's Hospital Melbourne.

Contributors The authors contributed as follows: REW contributed to the conception and design of the study, acquisition of data, analysis and interpretation of the data, drafting the article and revising it critically for important intellectual content and final approval of the version to be submitted; TJW contributed to the conception and design of the study, analysis and interpretation of the data, drafting the article and revising it critically for important intellectual content and final approval of the version to be submitted; GAJ contributed to the design of the study, analysis and interpretation of the data, drafting the article and revising it critically for important intellectual content and final approval of the version to be submitted.

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