

# Paramedic Knowledge, Attitudes, and Training in End-of-Life Care

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## Abbreviations:

ACLS = advanced cardiac life support  
AD = advance directive  
CPR = cardiopulmonary resuscitation  
DNR = do not attempt resuscitation  
EMS = emergency medical services  
EMT = emergency medical technician  
EOL = end-of-life  
POLST = Physicians Orders for Life-Sustaining Treatment Program

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## Abstract

**Introduction:** Paramedics often are asked to care for patients at the end of life. To do this, they must communicate effectively with family and caregivers, understand their legal obligations, and know when to withhold unwanted interventions. The objectives of this study were to ascertain paramedics' attitudes toward end-of-life (EOL) situations and the frequency with which they encounter them; and to compare paramedics' preparation during training for a variety of EOL care skills.

**Methods:** A written survey was administered to a convenience sample of paramedics in two cities: Denver, Colorado and Los Angeles, California. Questions addressed: (1) attitudes toward EOL decision-making in prehospital settings; (2) experience (number of EOL situations experienced in the past two years); (3) importance of various EOL tasks in clinical practice (pronouncing and communicating death, ending resuscitation, honoring advance directives (ADs)); and (4) self-assessed preparation for these EOL tasks. For each task, importance and preparation were measured using a four-point Likert scale. Proportions were compared using McNemar chi-square statistics to identify areas of under- or over-preparation.

**Results:** Two hundred thirty-six paramedics completed the survey. The mean age was 39 years (range 22–59 years), and 222 (94%) were male. Twenty percent had >20 years of experience. Almost all participants (95%; 95% CI = 91–97%) agreed that prehospital providers should honor field ADs, and more than half (59%; 95% CI = 52–65%) felt that providers should honor verbal wishes to limit resuscitation at the scene. Ninety-eight percent of the participants (95% CI = 96–100%) had questioned whether specific life support interventions were appropriate for patients who appeared to have a terminal disease. Twenty-six percent (95% CI = 20–32%) reported to have used their own judgment during the past two years to withhold or end resuscitation in a patient who appeared to have a terminal disease. Significant discrepancies between the importance in practice and the level of preparation during training for the four EOL situations included: (1) understanding ADs (75% very important vs. 40% well prepared; difference 35%: 95% CI = 26–43%); (2) knowing when to honor written ADs (90% very important vs. 59% well-prepared; difference 31%: 95% CI = 23–38%); and (3) verbal ADs (75% very important vs. 54% well-prepared, difference 21%: 95% CI = 12–29%); and (4) communicating death to family or friends (79% very important vs. 48% well prepared, difference 31%: 95% CI = 23–39%). Paramedics' preparation in EOL skills was significantly lower than that for clinical skills such as endotracheal intubation or defibrillation.

**Conclusions:** There is a need to include more training in EOL care into prehospital training curricula, including how to verify and apply ADs, when to withhold treatments, and how to discuss death with victims' family or friends.

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## Introduction

Honoring patients' wishes at the end of life is challenging in the pre-hospital setting. Several studies have indicated that field resuscitation is unwanted in 5–10% of paramedic, cardiac arrest calls.<sup>1–3</sup> However, states vary in terms of what constitutes legitimate evidence of a valid "Do Not Attempt Resuscitation" (DNR) order and the specific documentation that is required.<sup>4</sup> Emergency medical services (EMS) policies often require initiation of full resuscitative efforts of patients who lack obvious signs of death, unless written advance directives (ADs) are present upon arrival of the paramedics at the scene.<sup>5,6</sup> Even patients who have valid DNR orders may undergo unwanted resuscitation if their DNR documents are questioned or are unknown to bystanders, family members, or friends.<sup>7–9</sup> Verbal wishes expressed by family<sup>10</sup> or caregivers at the scene are difficult to validate, and often, are not recognized as legitimate evidence against resuscitation efforts in the field. Thus, invasive treatments and resuscitation procedures often are initiated even in situations in which death is expected or appears imminent, or when neighbors or friends know that the patient does not want heroic efforts or invasive treatments.

This survey was conducted to determine the frequency with which paramedics encounter end-of-life (EOL) situations in their practices and the preparatory training that they have received in this area. This study had four specific aims:

1. To ascertain paramedics' attitudes and beliefs about EOL decision-making;
2. To measure the frequency with which practicing paramedics encounter various EOL situations (e.g., communicating death, honoring ADs, and ending resuscitation efforts) and the importance they assign to them;
3. To assess the extent to which paramedics report they were trained to address EOL situations; and
4. To compare the importance paramedics place on EOL issues.

This study was conducted in Denver, Colorado and Los Angeles, California. The city of Los Angeles encompasses 468 square miles with a resident population of 3,700,000. Emergency medical services (EMS) are provided by the Los Angeles Fire Department (LAFD), which has 3,586 firefighters, of whom 767 are paramedics and 2,819 are Emergency Medical Technicians-Defibrillation (EMT-D). The city of Denver encompasses 157 square miles and has a resident population of 600,000. The city has 128 EMT-paramedics and 850 firefighter EMT-basics in a two-tiered system in which firefighter EMTs are the first response and dual, hospital-based, paramedic ambulances are dispersed as the second tier. The firefighter EMT-basics are certified to use defibrillators.

A principal objective of this study was to compare the importance and preparation for EOL skills.

## Methods

A written survey was administered to a convenience sample of paramedics in the two cities. Using internal mailing, paramedics received the survey with a cover letter from the prehospital director explaining the voluntary nature of participation in the study. Completed surveys were returned without identifiers in order to encourage participation.

Content for the survey was abstracted from multiple sources, including a curriculum written by emergency physicians to address end of life topics.<sup>11</sup> Questions relating to resuscitation skills were based on core content in paramedic training and a review of the survey by prehospital directors in the region. The survey included demographic information (age and gender), years of EMS practice experience, and years since initial training (Figure 1). Paramedics were asked several questions about their clinical practices: (1) how often they encountered various EOL situations (e.g., apparently terminal patients needing advanced cardiac life support (ACLS) interventions), ADs of uncertain authenticity or verbal DNR requests by family members or bystanders; (2) how often they transported hospice patients; (3) whether the EMS system provided written guidelines for withholding or withdrawing resuscitation in the field; and (4) whether they had resources available (brochures, telephone contacts, or counselors) when they pronounced death in the field.

The survey also asked about paramedics' personal experience making EOL decisions for family members or friends, including attitudes toward EOL care—specifically, whether or not to honor written ADs or family members' verbal requests to withhold life support in the field.

The survey listed seven tasks associated with standard Advanced Cardiac Life Support (ACLS) skills and end-of-life skills. These tasks included: (1) defibrillation; (2) intubation; (3) diagnosing death; and (4) recognizing indications for withholding or stopping basic life support or ACLS; (5) understanding ADs; (6) knowing when to honor written and advanced ADs; and (7) knowing how to support and communicate with family or friends about death in the field.

For each task, importance and preparation were measured using four-point Likert scales. Survey participants rated importance of a task as: 1 = "not important"; 2 = "of little importance"; 3 = "somewhat important"; or 4 = "very important". Preparation was rated as: 1 = "not at all prepared"; 2 = "poorly prepared"; 3 = "somewhat prepared"; or 4 = "well prepared".

## Statistical Processing

The analysis process proceeded in two steps. First, age, gender, experience, years since training, and other attributes and attitudes of the paramedics were summarized using mean values and their standard deviations for continuous variables and proportions and 95% confidence intervals (95% CIs) for categorical variables. "Importance" and "preparation" scores for each of the EOL and ACLS tasks also were tabulated using proportions and 95% CIs. As nearly all of the ACLS and EOL tasks were rated as "very important" by a majority of survey respondents, responses were collapsed into two dichotomous categories: "very important" vs. all other responses ("somewhat important", "of little importance", or "not important"). Similarly, preparation scores were collapsed into two categories ("well prepared" vs. the other three response categories).

For each EOL task, the "preparation during training" score was compared with various characteristics of the respondents (e.g., age, years of EMS experience, and personal experience with a dying family member). These para-

<p>1. In the last two years how often have you:</p> <ul style="list-style-type: none"> <li>- Encountered patients with terminal diseases in which you wondered whether your interventions and treatment were the right thing to do?</li> <li>- Withheld or stopped resuscitation in the field because written advance directives indicated the patient did not desire resuscitation?</li> </ul> <p><b>Answers:</b> never, seldom (1–2 times/year); sometimes (3–5 times/year); often (&gt;5 times/year)</p> <p>2. From your initial and continuing training please indicate how prepared you are in each of the following knowledge and skill areas?</p> <ul style="list-style-type: none"> <li>- Knowing when to honor written advance directives</li> <li>- How to perform endotracheal intubation</li> <li>- Indications for not starting CPR or ACLS</li> </ul> <p><b>Answers:</b> not at all prepared; poorly prepared; somewhat prepared; well prepared</p> <p>3. In your work please indicated how important you think the following knowledge areas are:</p> <ul style="list-style-type: none"> <li>- When to honor an advance directive</li> <li>- When to honor requests to not resuscitate</li> <li>- Indications for not starting CPR or ACLS</li> </ul> <p><b>Answers:</b> not important; of little importance; somewhat important; very important</p>
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**Figure 1**—Limited sample of survey items in the survey instrument (ACLS = advanced cardiac life support; CPR = cardiopulmonary resuscitation)

medic attributes also were compared with the paramedics' willingness to withdraw or withhold resuscitative treatments in the field. Chi-square tests were used to compare proportions, while Student's *t*-test was used to compare mean scores.

For each of the seven tasks, the proportion of participants answering "very important" was compared to the proportion answering "well prepared" to identify areas of under- or over-preparation. Proportions were compared using the McNemar chi-square test, which is appropriate for a within-subjects (paired) design.<sup>12</sup>

### Results

A total of 235 paramedics, 194/500 (31%) from Los Angeles and 41/128 (32%) from Denver, responded to the survey. The mean age of the respondents was 39 years (range = 22–59 years), and the majority (94%) was male. Nine percent had <2 years of professional paramedic experience, while 20% reported >20 years. On average, respondents reported that they spent a median of 48 hours (range 0–56 hours) per week in direct patient care. Eighty-seven percent of respondents transported hospice patients to the ED in the course of their jobs. Ninety-three percent of respondents stated they had written guidelines for withholding CPR; however, only 29% reported having contact numbers, brochures, or other resources to provide to next of kin. One-third of the respondents had participated in EOL decisions in their personal lives.

#### *Attitudes and Beliefs*

Almost all (95%, 95% CI = 91–97%) of paramedics believed "strongly" or "somewhat" that prehospital providers should honor written ADs in the field. Fifty-nine percent (95% CI = 52–65) believed that providers should honor family members' verbal wishes to withhold or stop resuscitation.

#### *Frequency of Encountering End of Life Situations*

Table 1 summarizes the frequency with which the survey participants had encountered various resuscitation and EOL situations within the past two years. Almost all of the

participants (98%, 95% CI = 96–100%) had been involved at least once in a resuscitation in which they questioned whether their EMS interventions were appropriate, due to advanced cancer, severe emphysema, or another apparently terminal condition. Nearly all (98%, 95% CI = 96–100%) paramedics had initiated ACLS at least once in patients that were considered to be terminal. Ninety percent (95% CI = 86–94%) of participating paramedics had withheld or withdrawn resuscitation in response to a written AD, while 40% (95% CI = 34–47%) had honored a verbal request on at least one occasion. Nearly half of the participants had been unable to determine the authenticity of a written (55%, 95% CI = 49–61%) or verbal (44%, 95% CI = 38–50%) AD to withhold or withdraw resuscitative interventions in the field. Much smaller proportions of survey participants reported that they had encountered these two EOL situations "often" (≥5 times in one year).

#### *Importance versus Preparation*

Table 2 highlights areas of under- and over-preparation in each of the task/skill areas identified in standard ACLS techniques and EOL decision-making. Paramedics rated all of these skills as "very important" in their practices. With respect to ACLS techniques, paramedics reported over-training in one skill area (field diagnosis of death) and moderate under-preparation in defibrillation techniques. In contrast, there were large discordances between importance and preparation for the four identified EOL skills. Significant ( $p < 0.05$ ) under-preparation was identified in: (1) understanding ADs (75% "very important" vs. 40% "well prepared", difference = 35%, 95% CI: 26–43%); (2) knowing when to honor written ADs in the field (90% "very important" vs. 59% "well prepared", difference = 31%, 95% CI: 23–38%); (3) knowing when to honor verbal requests not to resuscitate (75% "very important" vs. 54% "well prepared", difference = 21%, 95% CI 12–29%); and (4) communicating about death with a patient's family members or friends (79% "very important" vs. 48% "well prepared", difference: 31%, 95% CI: 23–39%).

EOL Skill or Task	"Ever"		"Often"	
	%	(95% CIs)	%	(95% CIs)
Encounter patients with terminal disease in which you "wonder" whether interventions and treatment were right	98	96–100%	56	49–62%
Use ACLS procedures (defibrillation, intubation, others) on patients with terminal disease	98	96–100%	46	39–52%
Withhold/withdraw resuscitation because patient clearly dead	99	98–100%	74	68–79%
Withhold/withdraw resuscitation due to written ADs requesting DNR	90	86–94%	14	9–18%
Withhold/withdraw due to family request for no resuscitation without written ADs	40	34–47%	3	1–5%
Withhold/withdraw resuscitation due to your judgment that patient has terminal disease	26	20–32%	4	2–7%
Been unable to determine authenticity of a written AD	55	49–61%	6	3–10%
Been unable to determine authenticity of verbal requests to withhold resuscitation efforts	44	38–50%	5	2–7%

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**Table 1**—Frequency of end-of-life situations encountered within the last two years (Number of paramedics responding to each question varied between 230 and 236; "Ever" = one or more times in past 2 years; "Often" = >5 times a year; ACLS = advanced cardiac life support; AD = advance directives; DNR = Do Not Attempt Resuscitation)

ACLS Tasks*	"Very important"		"Well prepared"		Absolute Difference	
	%	(95% CIs)	%	(95% CIs)	%	(95% CIs)
Field diagnosis of death (n = 234)	89	85–93%	98	96–100%	9	4–13%
Field intubation procedures (n = 233)	97	94–100%	98	96–100%	1	-2–5%
Defibrillation techniques (n = 231)	95	92–98%	80	75–85%	15	9–21%
Indications for stopping CPR/ACLS (n = 233)	87	82–91%	81	76–86%	6	-1–13%
Indications for not starting CPR/ACLS (n = 233)	90	86–94%	89	85–93%	1	-4–7%
EOL Tasks*						
Understanding types of ADs (n = 233)	75	70–81%	40	34–46%	35	26–43%
When to honor written ADs (n = 233)	90	86–94%	59	53–65%	31	23–38%
When to honor verbal requests not to resuscitate (n = 232)	75	69–81%	54	48–60%	21	12–29%
Supporting/ communicating with family/ friends about death in field (n = 234)	79	74–85%	48	42–55%	31	23–39%

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**Table 2**—Preparation in task skill sets (ADs = advance directives; CPR = cardiopulmonary resuscitation)

\*Numbers in parentheses represent the total number of paramedics responding to each question.

There was no association between age, years of EMS experience, or personal EOL decision-making experience and feeling "well prepared" for any of the EOL tasks. Similarly, there was no association between age, years of experience, or personal EOL decision-making experience and paramedics' attitudes toward withholding resuscitation attempts on the basis of written or verbal ADs.

**Discussion**

In almost all of the EMS systems in the United States, the initiation of resuscitation is mandatory in the absence of: (1) a physician on scene superseding paramedic protocols;

(2) clinical signs of irreversible death; or (3) a state-approved written DNR directive.<sup>6,13</sup>

Yet, recent studies of prehospital cardiac arrests indicate that 10–15% of patients for whom 9-1-1 emergency aid is summoned have terminal diseases and have made written or verbal "Do Not Resuscitate" requests.<sup>1,14,15</sup> The American College of Emergency Physicians and the National Association of EMS Physicians acknowledge that "current basic and advanced life support interventions may not be appropriate or beneficial in certain clinical settings".<sup>13,15,16</sup> This study suggests that such clinical settings and situations are encountered commonly in prehospital

care. Almost all of the paramedics who responded to this survey have used ACLS interventions on patients they thought were terminal and have wondered if the interventions they performed were right for their patients.

This study suggests that there is substantial under-preparation of paramedics in several EOL tasks, including understanding the content of various advance directives, knowing when to honor written or verbal requests not to resuscitate, and communicating about death with a patient's family members or friends. These gaps in paramedic preparation may not be surprising, since these topics have received little attention in textbooks and training curricula for prehospital care providers.<sup>7,17-20</sup> Paramedics would benefit from additional training and practice in complex EOL decision-making—for example, how to verify the authenticity of an AD, when and how to respond to the verbal wishes of family members, and when and how to limit or withhold resuscitative interventions at the end of life.

Few studies have been published addressing EOL decision-making by paramedics. In a 1998 survey, Partridge found that 20% of EMS responders did not feel that written ADs should be considered before implementing extraordinary life support measures in terminally ill patients.<sup>21</sup> In a large Canadian study, cardiopulmonary resuscitation (CPR) and ACLS measures were initiated in 73% of patients with terminal illnesses and either written or verbal DNR requests from family members—not significantly different from the 83% rate of attempted resuscitation when no DNR request was made.<sup>14</sup> Marco *et al* reported that 11% of 1,500 emergency medical technicians would not honor state approved advance directives, and 90% would not honor verbal requests.<sup>9</sup>

At the same time, paramedics also may make unilateral decisions to withhold resuscitation based solely on their judgment that the patient is near death. Marco and Schears found that 35% of EMS personnel reported that, at least “sometimes,” they had withheld resuscitation efforts when they considered the situation to be “futile”.<sup>9</sup> In Guru's Canadian study, EMS regulations requiring initiation of CPR were not followed in 30 of 114 (26%) patients with a terminal illness.<sup>14</sup> All of these studies suggest that prehospital management of EOL situations may not be uniform, perhaps leading to over- or under-resuscitation of some patients.

Confusion and misunderstanding appear to be common among prehospital care providers with regard to EOL decision-making. Partridge documented considerably more uncertainty on the part of prehospital personnel about the meaning of living wills and durable power of attorneys, than on DNR directives.<sup>21</sup> Heilicser also reported that paramedics often recognize that they are poorly trained to decide when to honor verbal or written DNR wishes, when it is inappropriate to initiate full resuscitative attempts, and what they should say to family members and caregivers in the event of a prehospital death.<sup>22</sup> In the current study, paramedics also reported that they were poorly prepared to handle these EOL situations.

Many states have developed protocols to assist paramedics in withholding resuscitation interventions in appropriate circumstances. For the most part, such protocols have been based on physiologic indicators of “medical futility”;

protocols for EOL care based on patients' wishes still is rare.<sup>23,24</sup> In Oregon (and more recently in other states), the Physician Orders for Life-Sustaining Treatment Program (POLST) initiative has increased the percentage of elderly or terminally ill patients who have written ADs. In one pre-hospital survey, application of the POLST protocol changed the treatment in 45% of emergency calls in which the protocol was available to guide management.<sup>25</sup>

In King County, Washington, a new protocol was developed that permits paramedics to withhold resuscitation based on verbal as well as written directives from patients or caregivers, so long as the patient is identified as “terminal”. Compared with a concurrent comparison group, this expanded policy led to a doubling of the proportion of cardiac arrest patients in whom resuscitation was withheld (11.8% vs. 5.3%, respectively). More than half of the increase in withholding resuscitation incidents involved the honoring of verbal requests.<sup>1</sup>

Recently, Lynn and Goldstein wrote that the lack of reliable, transparent communication of patient wishes results in undesired over-treatment for some patients across the entire medical care system.<sup>7</sup> They highlight the need for clear directives that are documented by patients and honored by hospitals, emergency departments, EMS systems, long-term care facilities, and hospice providers. The challenges are especially great in prehospital settings. Prehospital responders will never be able to honor all of the DNR requests that may, in retrospect, may be confirmed. Indeed, providers' judgments that a patient is “terminal” or that treatment is “futile” are inherently risky, because prehospital personnel possess only a quick snapshot of a patient's clinical condition, quality of life, and wishes regarding EOL care.<sup>6,26</sup> Therefore, as Kellermann and Lynn have recommended, protocols encouraging paramedics to withhold resuscitation must be written carefully, guided by skilled medical input, public education campaigns, building of community consensus, and careful development of public policy.<sup>6</sup>

#### Limitations

This study has several important limitations. It is based on a relatively small sample of paramedics practicing in only two cities. These results may not apply to other urban or rural locales or to other EMS systems in which training or practice protocols differ. The sample size limits the precision of the results and the power to detect associations among experiences, training, and attitudes. Additionally, the survey response rate was only 31%; information about the larger population of paramedics from which the sample was drawn was not collected. Therefore, the direction or magnitude of any non-participation bias cannot be assessed. Also, all of the data were self-reported, and there is no assurance that the responses were either reliable or valid. Additionally, construct validity was not tested.

#### Conclusions

This survey suggests that while many paramedics perceive EOL-related issues to be important, they do not feel adequately trained in these areas. There may be a need to include more training in end-of-life care into the paramedic training curricula.

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