

Survey of Respiratory Therapists' Attitudes and Concerns Regarding Terminal Extubation

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BACKGROUND: There is little published information on the role of respiratory therapists in the process of withdrawal of mechanical ventilatory support. **METHODS:** We surveyed practicing respiratory therapists at 6 acute-care hospitals in a large urban area and asked about particular concerns and attitudes regarding terminal extubation. **RESULTS:** One hundred nineteen questionnaires were analyzed. The majority of respiratory therapists had participated in terminal extubation, but most were not regular participants in the decision-making process leading to withdrawal. **CONCLUSIONS:** Practicing respiratory therapists expressed a desire for a role in the decision-making process, education regarding terminal care, and more definitive orders for terminal extubation. *Key words: palliative care, terminal care, respiratory therapy, withholding treatment, mechanical ventilators, intensive care, critical care, life support.* [Respir Care 2005;50(8):1046–1049. © 2005 Daedalus Enterprises]

Introduction

Roughly one fifth of all deaths in the United States now occur in the hospital, during or shortly after intensive care.¹ Of those patients who die in intensive care units (ICUs), the majority do so after a decision is made to limit or withdraw life-supportive therapies.² Recent studies suggest that as many as 70–90% of ICU deaths are due to withdrawal or withholding of life support.^{3,4} The number of deaths due to withdrawal of life support has been increasing, and the trend appears to be international.⁵ It has been observed that withdrawal of mechanical ventilatory support typically occurs midway through a sequence of withholding or withdrawing life-sustaining therapies in the ICU. For example, dialysis and blood product administra-

tion are often withheld prior to discontinuation of mechanical ventilation, while antibiotics, intravenous fluids, and nutrition tend to be withdrawn later,⁶ perhaps reflecting clinicians' perceptions of the relative burdens versus benefits of these therapies.

Terminal extubation is a term often used to describe removal of mechanical ventilatory support, usually accompanied by extubation, from a patient who is expected to die as a result of the removal of support.⁷ Respiratory therapists (RTs) have an essential role in managing mechanical ventilation, and when terminal extubation is carried out, the RT is often called upon to perform this task. Of approximately 100,000 practicing RTs in the United States, three fourths practice in acute-care areas where participation in termination of life support may be part of their job.⁸ Questions have arisen regarding the specific delegation of this and other tasks of withdrawal of life support.⁷ The RT is potentially vulnerable to major anxiety and stress during this procedure. Though much attention has been given to ethical and legal aspects of terminal extubation, there is little published information regarding RTs' attitudes and concerns regarding terminal extubation. In a recent MEDLINE search, Giordano found no citations naming RTs in titles in conjunction with palliative and end-of-life care.⁸ On the other hand, critical care physicians and nurses have been surveyed by critical care specialty organizations, yielding useful descriptive data about their attitudes and beliefs about withdrawal of life support.⁹

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In this study our objectives were to identify the extent of involvement by RTs in terminal extubation in our community, to quantify response to several questions of concern, and to discover some areas of education needs regarding this aspect of end-of-life care.

Methods

We developed a brief questionnaire and distributed it to all practicing RTs at 6 acute-care hospitals in San Diego County, California. These 6 facilities have 1,651 total beds and consist of 4 acute-care general hospitals, 1 long-term acute-care hospital, and 1 maternity-neonatal hospital. The survey asked questions about the RT's experience in terminal extubation, opinions concerning an RT's level of participation, and concerns about the event of terminal extubation (Appendix). All questionnaires received were anonymous. The institutional review board approved the research and waived the requirement for informed consent. Differences between hospitals were analyzed with the chi-square test. Confidence intervals (CI) for proportions were calculated using a significance level of 0.95.

Results

One hundred nineteen responses were received, from 183 distributed surveys (65% response rate). The RTs had an average of 14.6 years practice experience (range 1–35 y), and 50% had the RRT credential. Eighty-three percent reported spending the majority of their practice in acute care, and 15% in long-term acute care. On average, respondents had been involved in terminal extubation on 2.2 occasions (range 0–12) within the last year, and 33 times (range 0–350) in their entire career.

In response to the question on how often the RT was present at the discussion with family or patient when terminal extubation is decided upon, the results were: always 2.7% (CI 0–5.7), most of the time 2.7% (CI 0–5.7), some of the time 22% (CI 14.4–29.6), rarely 38% (CI 29.1–46.9), and never 34.5% (CI 25.8–43.2). RTs estimated an attending physician was physically present at the bedside for terminal extubation in 18.6% of cases in their primary institution. However, this varied from a low of 5.5% at the long-term acute-care hospital to 66% at a large women and infants hospital where mechanical ventilation is done exclusively in a neonatal ICU. Respondents overall estimated that in their institutions a critical care physician could arrive in the ICU in 5.7 min in case of emergency. Responses to several of the most relevant questions are depicted in Table 1.

Interhospital differences in responses generally were not substantial. However, for the question regarding whether a

physician should always be present at the bedside for terminal extubation, at the women's hospital (neonatal ICU only) 67% responded affirmatively, whereas at the long-term acute-care hospital none (0%) felt this was necessary ($p < 0.001$).

Respondents were asked to rank 3 roles of an RT, according to the most important priority. The percentage ranking each as top priority were: preserving life 24.4% (CI 16.7–32.1), relieving suffering 27.7% (CI 19.7–35.7), ensuring a quality of life 29.4% (CI 21.2–37.6), and unsure 18.5% (CI 11.5–25.5).

Discussion

The response rate of 65% in this study was quite satisfactory. The results confirm that nearly all the respondents have participated in terminal extubation. A small but important number of individuals have experienced emotional or ethical problems with terminal extubation. Most understand that they may decline to participate if they are uncomfortable with terminal extubation, and they know where to access emotional support. Additional education regarding these issues may be warranted.

The question of whether an attending physician must be physically present in all cases of terminal extubation was an important stimulus for the development of this survey, as some controversy has evolved in the community over the standard of care. Our results indicate that, with the notable exception of a neonatal ICU, physicians are physically present in only a small minority of cases, and most RTs generally do not perceive a need for bedside physician participation in the technical phase of extubation. However, in the neonatal ICU included in this study, physicians are present in most cases of ventilator withdrawal, and most RTs there believe this is necessary. Most RTs thought that the patient's nurse should be present at terminal extubation.

The individual narrative responses (which are not included here) indicated some diversity of opinion regarding the role of the RT in the process leading up to terminal extubation. Some RTs wish to defer the decision-making interaction to family, physicians, nursing, and others. To some extent this may relate to current common practice in our community of rotating RT assignments through a variety of units within the hospital, as opposed to nursing and physicians, who tend to maintain more consistent assignments within units and often to the same patients. Nevertheless, a majority of respondents indicated that RTs should routinely be included in the multidisciplinary team conference at which terminal extubation is decided. In the narrative comments, some respondents indicated that being asked to perform the technical aspect of terminal extubation without full participation in the decision-making process is difficult for them.

RESPIRATORY THERAPISTS' ATTITUDES AND CONCERNS REGARDING TERMINAL EXTUBATION

Table 1. Selected Questions and Response Rates From a Survey of Practicing Respiratory Therapists

Question	Yes Response (%)	95% Confidence Interval
Have you ever personally removed ventilator support as part of terminal extubation?	96	92.5–99.5
Have you ever been asked to take a patient off the ventilator when you did not feel it was ethically correct?	13	7–19
Have you ever been informed that you can decline to perform terminal extubation if you are uncomfortable with this?	53	44–62
Have you ever been sufficiently upset after performing terminal extubation to seek professional counsel, clergy, etc?	9	3.8–14.2
Would you know where to find emotional support at your institution if needed as a result of performing terminal extubation?	77	69.4–84.6
Are you disturbed when treatment is withheld or withdrawn in a patient who is deemed terminal or irreversibly ill?	19	11.8–26.2
Do you think the attending physician should always be physically present at the bedside when a terminal extubation is done?	29	20.7–37.3
Should a bedside nurse always be in the room at the time of terminal extubation?	75	67.1–82.9
Should respiratory therapists routinely be included as part of the conference that occurs prior to a terminal extubation decision?	73	64.8–81.2
Are written orders for terminal extubation always sufficiently explicit to cover you?	44	34.8–53.2
Would development of a specific protocol or standardized orders for terminal extubation be desirable at your institution?	72	63.7–80.3
Did you receive any education on end-of-life care or termination of life support in respiratory therapy school?	45	35.9–54.1
Have you received any education on termination of life support in your working career?	33	24.5–41.5

It is troubling that many RTs feel that the written orders for terminal extubation are not always sufficiently explicit to provide the appropriate legal basis for the procedure. This is consistent with findings of a 2001 study of ventilator withdrawal in a neonatal ICU, in which 22% of charts had no written order for ventilator removal, and only 83% of charts contained a notation about parental participation in the decision making.¹⁰

It has been pointed out that withdrawal of life support should be treated like any medical procedure, with proper planning, education, documentation, and quality-improvement initiatives.² Since RTs play an important part in the management and ultimate withdrawal of ventilatory support, the rationale for RT involvement in the process of decision making is strong. Our study suggests that a majority of RTs are willing to take a larger role in this critical phase of patient care.

This study is subject to the limitations common to survey research. Survey completion may be higher among more highly motivated individuals or those with specific interest in a subject. The high response rate probably mitigates these effects. The number of surveys from the long-term acute-care hospital and neonatal ICU were relatively small, limiting the generalizability of comparisons to these groups. Also, surveys rely upon recall of facts that may not always be accurately remembered by respondents. Because the survey was carried out in a single urban area and

end-of-life practices may vary regionally, results may not be generalizable to other areas.

Conclusions

The great majority of RTs in our community have participated in terminal extubation. Outside of the neonatal units, most RTs did not feel that physician presence at the bedside should be mandatory during terminal extubation. Neonatal RTs observed a higher incidence of physician presence during terminal extubation, and they expect physician presence during this procedure. There may be a role for standardization of the orders for terminal extubation, and vigilance to ensure that appropriate orders are present in every case. Education regarding terminal extubation should be included in RT training and staff development. Each hospital should assess the practicability and desirability of including RTs in multidisciplinary meetings during the process of deciding on terminal extubation.

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APPENDIX: Survey on Terminal Extubation As Used in This Study

Please answer each of the following questions based on your own opinion and knowledge. Where numbers are requested, please give your best estimate.

Demographics

How many years experience do you have as a respiratory therapist? _____ years

Your credentials (check all that apply): RT _____ RRT _____ BA/BS _____ Master's _____ PhD _____

In what setting do you spend the majority of your practice as a respiratory therapist? Acute-care hospital _____ Long-term acute-care hospital _____ Subacute or skilled nursing facility _____ Home care _____ Other (please describe) _____

Personal Experience

Have you ever personally removed ventilator support for the purpose of terminal extubation? Yes ___ No ___

How many times in the last year have you been involved in terminal extubation, as a respiratory therapist, caring for the patient in question? _____

How many times in your entire career as a respiratory therapist have you been involved in terminal extubation, caring for the patient in question (estimate)? _____

Have you ever been asked to take a patient off the ventilator or terminally extubate a patient when you didn't feel it was ethically correct? Yes ___ No ___

How often, where you now work, is the respiratory therapist present at the discussion with family or patient when a decision regarding terminal extubation is made? Always ___ Most of the time ___ Some of the time ___ Rarely ___ Never ___

In what percentage of cases of terminal extubation, at the institution where you work, is an attending physician *physically present at the bedside* when the patient is extubated/removed from the ventilator? _____%

On average, in the institution where you primarily work, how long would it take for a critical-care physician to arrive in the intensive care unit if you had an immediate life-threatening emergency such as accidental extubation or cardiac arrest? _____ minutes

Have you ever been informed that if you feel uncomfortable performing the task of terminal extubation that you have the right to decline? Yes ___ No ___

Have you ever been sufficiently upset after personally performing terminal extubation to consult with a professional counselor, clergy, psychologist, or other mental health worker regarding this? Yes ___ No ___

If you felt the need to seek emotional support secondary to completing the task of terminal extubation, would you know where or how to find support at your institution? Yes ___ No ___

Does it disturb you when treatment is withheld or withdrawn in a patient who is deemed terminal or irreversibly ill? Yes ___ No ___

Opinion

In your opinion, should the attending physician *always* be present at the bedside (as opposed to in the hospital, nearby, available by phone, etc) when you terminally extubate a patient? Yes ___ No ___

In your opinion, should the patient's bedside nurse *always* be immediately present in the room when terminal extubation is carried out? Yes ___ No ___

Should supplemental oxygen be given to a patient after terminal extubation, when the expectation is for death to occur within a short time (minutes to hours)? Yes ___ No ___

Rank from 1 to 3 the following roles of a respiratory therapist, with 1 being the most important priority to you and 3 being the least important priority: _____ Preserving life _____ Relieving suffering _____ Ensuring a quality of life

Should respiratory therapists routinely be included as part of the multidisciplinary team family conference that occurs prior to a terminal extubation decision? Yes ___ No ___

Are the written orders for terminal extubation, in your opinion, always sufficiently explicit to cover you? Yes ___ No ___

Would development of a specific protocol or standardized orders for terminal extubation at your institution be desirable? Yes ___ No ___

Education

Did you receive any education on end-of-life care or termination of ventilatory support while you were in respiratory school? Yes ___ No ___ If Yes, approximately how many hours? _____

Have you received any education on terminal extubation during your working respiratory career? Yes ___ No ___ If Yes, approximately how many hours? _____

General comments or suggestions: _____