

EFFECT OF PATIENT'S AGE ON  
RESPIRATORY CARE PRACTITIONER'S  
ATTITUDE TOWARD LIFE SUPPORT

BY

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Effect of Patient's Age on Respiratory Care Practitioner's Attitude Toward Life  
Support

By:

Deborah L. Ortiz

A Master's Research Project in Partial Fulfillment of  
the Requirements for the Degree

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Approved August, 1994

Chairperson

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## Effect of Patient's Age on Respiratory Care Practitioner's Attitude Toward Life

### Support

### Abstract

Technological advancement has made possible the sustaining of life in numerous clinical situations. Mechanical ventilation represents one of the most important advancements in modern technology. Health care providers often make difficult ethical decisions with the application of these technologies. Issues surrounding technological advancement are the quality of life for patients in need of such support and the allocation of limited resources. Although each of these items hold equal importance, this study primarily addressed age as possible criteria for determining the allocation and withholding of resources, specifically life support systems.

A survey was conducted on 200 Respiratory Care Practitioners (RCPs) from various local hospitals who were active members of the California Society of Respiratory Care (CSRC) as to the effect of a patient's age on their attitude toward recommending withholding or withdrawing life support systems. The RCPs were randomly selected. An ANOVA test was used to analyze data received from the participants' survey responses. It was hypothesized that the RCP would recommend and support the withholding or withdrawing of life support from elderly patients over that of the young and middle aged patients. The results of

this study showed a definite preference of the RCP for sustaining life support for the target group young and middle aged patient over that of the elderly patient ( $F_{(5, 1194)} = 32.37, p < .000$ ). The implications of this study suggest that age may be a consideration when planning patient care management specifically toward the application or withdrawal of life support systems.

From the human resource management perspective, the involvement of the Respiratory Care Practitioner in the decision making process may improve their perceived value to the organization and enhance job satisfaction by increasing the "depth" of their job responsibility. The inclusion of the RCP as a member of the health care team may offer increased satisfaction to the individual for the recognition and respect received as a part of their role in patient care management.

## Introduction

Health care is focusing on programs designed to keep patients healthy. One result of this preventive medicine has been an increase in the elderly population. Another result has been the technological advancements, such as mechanical ventilation, sustaining life in patients of all ages with major organ or system failures. The questions become, "What is the quality of life for these patients on life support systems?" "What are the costs, both emotionally and financially, to the family, health care systems and insurance companies?" "Should everyone be kept alive through artificial means?"

### Historic overview

Physicians today consider it their professional duty to prolong life under most circumstances. According to Amundsen, as reported in Luce and Raffin (1988), the Hippocratic Corpus described the three roles of medicine as relieving suffering, attenuating disease, and refraining from treating hopelessly ill persons, lest physicians be thought of as charlatans. Physicians began to care for the sickest patients in an effort to understand the involved pathophysiology. Society and patients began to believe that life should be extended no matter what the circumstance. Physicians developed technologies to support life and such support became a primary obligation of medicine. In Luce & Raffin (1988), Fuchs calls



this obligation the "technological imperative - the desire of the physician to do everything that he has been trained to do regardless of the benefit-cost ratio."

Society is now redefining life and death and is changing the focus on life support at all costs. Death was once defined as a "stopping of the flow of vital body fluids manifested by a failure of breathing and heartbeat" (Luce & Raffin, 1988). The integration of CPR, mechanical ventilation, and supportive drugs has necessitated a new definition of death. It is now defined as not only the irreversible cessation of cardiopulmonary function but also the "irreversible cessation of all functions of the entire brain, including the brain stem (the central nervous system)" (Luce & Raffin, 1988). While redefining death, society is also looking at life no longer as a biological process but rather a process of self-awareness and social integration. The issue is not just the loss of bodily functions indicating death but the loss of the vital parts of the brain that "constitute death of the person as a whole" (Luce & Raffin, 1988). This is especially relevant when including traditional definitions of brain death as well as patients who are anencephalic, comatose or in a persistent vegetative state, or those who would prefer death to life with pain and suffering.

### Deciding appropriateness of treatments

The question of who decides what therapies are appropriate has gained much notoriety. Many studies emphasize the patient's right to autonomy as the

absolute final word when refusing treatment (e.g., Annas, 1990; Lantos, Miles, Silverstein & Stocking, 1988; Miles, Singer & Sieglar, 1989; Blackhall, 1987; Schneiderman & Spragg, 1988; Luce & Raffin, 1988; Ruark & Raffin, 1988; Wanzer, Federman, Adelstein, Cassel, Cassem, Cranford, Hook, Lo, Moertel, Safar, Stone, & Eys, 1989). The code of patients' rights as articulated by the American Hospital Association and stated in Ruark and Raffin (1988) includes the right to participate actively in decisions regarding medical care (to the extent permitted by law, this includes the right to refuse treatment); and the right to have all patients' rights apply to the person who may have legal responsibility to make decisions about medical care in behalf of the patient. This autonomic right becomes less clear, however, with the application of therapies that the health care provider perceives as futile.

Futility has been defined as therapies and or treatments that are inappropriate, not beneficial or disproportionately burdensome and may have potential to cause harm (e.g., Schneiderman & Spragg, 1988; Tomlinson & Brody, 1988; Blackhall, 1987). "Futile therapies - those that offer no immediate or long-term benefit to the patient - may not be considered either medically indicated or ethically obligatory. According to federal legislation passed in 1984, treatment is not legally required if 'the provision of such treatment would be virtually futile in terms of the survival ....' " (Lantos et al., 1988). This source goes on to say that



clinical definitions will most likely involve statistical estimations of a treatment's chances rather than absolute predictions of its failures and would be considered virtually futile if the probability of benefit was very low. The Hasting Center Task Force report on guidelines for the termination of life-sustaining treatment is quoted in Tomlinson and Brody (1990).

In the event that the patient or surrogate requests a treatment that the responsible health care professional regards as clearly futile in achieving its physiological objective and so offering no physiological benefit to the patient, the professional has no obligation to provide it. However, the health care professional's value judgment that although a treatment will produce physiological benefit, the benefit is not sufficient to warrant the treatment, should not be used as a basis for determining a treatment to be futile.

Seventy-three percent of Americans surveyed in a 1987 poll as reported in Blendon (1988) believe that the family of an unconscious terminally ill elderly patient should be able to direct the physician to remove life support systems. This was stated out of concern for the quality of life for the elderly and their families, not to reduce the associated costs.

Previous studies have been conducted on cardiopulmonary resuscitation (CPR) and when it is indicated and when it should be withheld by the writing of

do-not-resuscitate (DNR) orders (e.g., Lantos et al., 1988; Taffet, Teasdale & Luchi, 1988; Murphy, 1988; Tomlinson & Brody, 1990; Schiedermayer, 1988; Tomlinson & Brody, 1988; Blackhall, 1987). These studies have addressed patient age, disease and quality of life before and after CPR. Tomlinson and Brody (1988) described three rationales for DNR: no medical benefit - physicians have no obligation to provide, and patients have no right to demand, medical treatment that is of no demonstrable benefit; poor quality of life after CPR - the arrest, the resuscitation effort, or both threaten a change in the patient's quality of life, from one that is at least minimally acceptable to one that is unacceptable; and poor quality of life before CPR - the patient's current quality of life before any anticipated arrest and resuscitation ... applied to a patient who was severely incapacitated, mentally or physically, or who suffered intolerably from a terminal or chronic disease.

The same logic that supports the DNR order also supports the withholding or withdrawing of other life-prolonging measures (Tomlinson & Brody, 1988). Some courts may treat the withholding or withdrawing of nutrition and hydration from incompetent patients differently from other treatments. In the 1983 Barber v. Superior Court case as reported in Ruark & Raffin (1988), some legal criteria for the withdrawal of life support were identified. In this case murder charges were brought against the physicians who withdrew intravenous nourishment to an

irreversibly comatose man. The courts dismissed the charges based on the concept of proportionality as the criterion to be used in deciding whether to withdraw life support. The court stated, "Proportionate treatment is that which in the view of the patient, has at least a reasonable chance of providing benefits to the patient which outweigh the burdens attendant to the treatment." The courts referred to the 1975 Quinlan decision relying on, "the reasonable possibility of return to cognitive and sapient life as distinguished from ... biological vegetative existence" (Ruark & Raffin 1988).

A physician is not morally obligated to use extraordinary care such as CPR in end stage diseases nor is the physician "obligated to provide mechanical ventilation to a patient if it will not contribute to preserving life or alleviating suffering ... [or] in a persistent vegetative state" (Schneiderman & Spragg, 1988). The Catholic Church has defined extraordinary care that is not morally obligatory, because (1) it is medically impossible or futile, (2) it provides no benefits in terms of prolonging life or alleviating suffering, or (3) the resulting burdens on the patient are excessive in relation to the benefits gained (Schneiderman and Spragg, 1988).

The Office of Technology Assessment (OTA), as reported in Schiedermayer (1988) conducted an extensive review of CPR in the elderly. It stated that age is not a good predictor of the long-term outcome of resuscitation,



however, some of the studies show that elderly patients as a group have somewhat poorer outcome of resuscitation than younger patients ... outcomes in the elderly patients reflect the higher prevalence of multiple diseases in these patients. Age can be a clinical characteristic that triggers discussions of DNR, and under certain circumstances age may be one characteristic of a group with long-term survival. A study conducted by Taffet et al. (1988) stated that even though age is not an important determinant in the outcome of CPR, the clinical impression was that the geriatric patients were not living to discharge after CPR.

An age of 70 years or greater was associated with a poor outcome after in-house CPR. In this study there were 22/77 successful CPR efforts in the age group of 70 years or older. CPR efforts were successful (137/322) in ages less than 70. Of the 137 successful resuscitations, 21 patients lived to discharge. None of the 22 successful resuscitations of the patients greater than 70 years lived to discharge. Taffet et al. (1988) goes on to interpret the results by saying that those patients 70 years and older initially respond as well hemodynamically to the resuscitative effort, but their neurologic recovery is more impaired, an early indication of their poor outcome. "Advanced age itself may be a better marker of severity of illness ..., for it is well known that the mortality of many illnesses increases dramatically in elderly patients" (Taffet et al., 1988).

In a study conducted by Crawford, Schwartz, Petersen and Clark (1988), the risk factors for ventilator support were analyzed. The results showed the risk of ventilatory support increased in a linear fashion when age was examined as a continuous variable. Additionally, studies with patients with hematologic malignancies in intensive care settings, patients with acute hypoxemic respiratory failure, and patients requiring ventilatory support for more than 24 hours have demonstrated an increase in mortality with increasing age, particularly after the fifth decade... (Crawford et al., 1988).

When the issues of CPR and the potential outcomes were discussed with elderly patients, few wanted CPR. This was confirmed in a study by Murphy (1988). The observation also supported the study conducted on the residents of a life-contract residential institution, which showed that 50% of the informed elderly did not want CPR, 42% wanted their physician to decide, and 7% wanted CPR.

The Respiratory Care Practitioner is usually one of the first to respond in an emergency such as a "code blue" or sudden death. The RCP often performs the CPR including the intubation of the acutely ill patient in an emergency situation. Decisions regarding the withholding of therapies such as CPR must be discussed in advance with the entire health care team, including the RCP. This communication would eliminate the futile or unwanted attempts of life sustaining therapies during emergency situations (Luce & Raffin, 1988; Ruark & Raffin, 1988; Tomlinson &

Brody, 1988; Miles, 1991). The inclusion of the RCP in the decision making process is important to the concept of team decisions and multidisciplinary care management. The decision to withhold or withdraw life support is often very difficult. The inclusion of the RCP may help present additional information based on his/her training and experience.

### Allocation of resources

A 1987 national survey poll reported in Blendon (1988) questioned the public's opinion in the event of "hard choices" during a serious economic crisis. Health care experts focused their attention in three target groups for slowing the nation's health care spending: (1) limiting care to the nation's elderly, (2) slowing the use of or withholding "big-ticket" medical technologies, and (3) reducing the future supply of physicians. Most Americans were resistant to major cost-containing proposals directed at the health care needs of the elderly and 78% favored increased spending for health care programs for the elderly.

Tomlinson and Brody (1990) suggest that with restrictions being placed on the autonomy of both the physician and the patient, limits of economic resources, there is a need to place restraints on which medical treatments will be made available to various categories of patients. They caution that in an era of cost containment, there is danger that issues of futility will become entangled with issues of what can and cannot be afforded. "Although care that is futile is also not



'costworthy,' care that is not costworthy relative to other uses of medical resources may still offer benefits to the patient and so not be futile." (Tomlinson & Brody, 1990).

Schneiderman & Spragg (1988) discussed specific application of resources relative to life support systems. In a discussion of a patient with AIDS who was placed on mechanical ventilation, the physicians raised questions about the appropriateness of the ventilator therapy and expressed concern about the costs of providing care to a patient who was apparently unable to appreciate its benefits. The authors of this study caution that if a treatment's appropriateness is unclear, "mechanical ventilation should be started with the knowledge that if it proves to be futile or not beneficial or disproportionately burdensome, it can later be stopped."

Miles (1991) discusses a Minnesota 1990 case where an 85 year old woman in a persistent vegetative state as a result of severe anoxic encephalopathy, continued to receive mechanical ventilation upon the insistence of her family. The physicians, specialists, and ethics committee all concurred that the respirator was "non-beneficial." Her medical bills totaled \$700,000 (incurred at an acute care and a subsequent chronic care hospital) which was paid by Medicare and a private insurer. "Ethically, 'pulling the plug' of a mechanical ventilator is no different from discontinuing any inappropriate medical treatment ..." "Ultimately we must set ethically sound guidelines for allocating costly services such as intensive care if we

are to provide medical care in a wise manner in the United States" (Danis, Green, Southerland & Patrick, 1988).

Even though allocation of resources was never cited as a reason for withholding or withdrawing life support in the Smedira, Evans Cohen Lo, Cooke, Schecter, Fink, Epstein-Jaffe, May & Luce study (1990), the authors did state that when the intensive care unit was full and a decision was made to withhold or withdraw life sustaining treatment, an effort was made to expedite the implementation of the decision. Also stated by the authors of this study, "we believe society will respond to the rising cost of intensive care by increasing scrutiny, trying to establish guidelines for its withholding or withdrawal, and making more explicit decisions about the desirable number of intensive care beds." They continue, "Further technological advances, the increasing number of elderly patients with chronic illness, and the continued spread of the AIDS epidemic will also raise difficult policy issues with respect to the use of the intensive care unit."

Once mechanical ventilation has been implemented, it is often difficult to withdraw the support. The Respiratory Care Practitioner's time and expertise is required throughout the entire process. This would include regular monitoring and maintenance of the equipment, patient's airway and emotional support for the patient and family. The process is expensive and time consuming. When such

systems are employed, it should be done so in an attempt to reverse a clinical condition.

### Quality of life considerations

"Health related quality of life refers to the level of well-being, satisfaction, and opportunity associated with events or conditions in a person's life as influenced by disease, accidents, or treatment (Patrick, Danis, Southerland & Guiyoung, 1988). Judging quality of life cannot always be accurate in the assumption of the patient's preference for life sustaining treatment. Physicians do not always accurately evaluate patients' quality of life or predict patients' treatment preferences (Danis et al., 1988). "The ethics of life support require physicians to ascertain, whenever possible, the views of each patient or representative on the balance between quality and mere prolongation of life - the concept of proportionality. Professionals should diligently avoid making assumptions in this area..." (Ruark & Raffin, 1988).

Patrick et al. (1988) assessed quality of life measured on three scales - the Sickness Impact Profile (SIP), the Psychological General Well-Being Schedule (PGWB) and the Perceived Quality of Life scale (PQOL). These scales were answered by patients,  $69 \pm$  years of age, having experienced intensive care or by surviving family members of patients who received intensive care. The results of this study were that patients frequently reported a high level of general well being



and satisfaction regardless of their physical status and behavior dysfunction.

"Adaptation-level theory suggests that patients evaluate their lives more positively when confronted by distressing or life-threatening experiences. Patients might well adjust to lower levels of health by sustaining their satisfaction with life." This study cautions that often an individual's ability to function has been used as a quantifiable measure of quality of life ... it is necessary to assess perceptions of life quality of patients who have undergone life-sustaining treatment.

Similar results were reported in a study conducted by Danis et al. (1988) that elderly patients with prior intensive care hospitalizations were interviewed as to their willingness to undergo future intensive care unit hospitalizations. They were generally extremely willing to undergo intensive care regardless of their age, functional status, perceived quality of life, hypothetical life expectancy, or the nature of their previous intensive care unit experience. "While families of patients who died in the hospital were less receptive to intensive care than surviving patients, the majority were nonetheless willing to utilize intensive care even for one month of survival. This may be explained by the fact that when families and patients experience sudden life-threatening illnesses, they may value survival over quality of life. "Fear of death may overwhelm other concerns" (Danis et al., 1988). "Only when there is no hope for recovery, a vegetative state, or other severe

neurologic impairment are a number of patients unwilling to undergo intensive care" (Danis et al., 1988).

In the Smedira et al. study (1990), patients who survived treatment in the intensive care unit and the families of the patients who died stated that they would forgo future intensive care if the patient had little or no hope of recovery or was in a severely impaired neurologic state.

### Decision making process

The decision that a particular therapy offers no benefit to a patient is reviewed, discussed and agreed upon by the primary physician, any attending physicians, and other team members. These members should include the primary care nurse, Respiratory Care Practitioner since they spend eight to twelve hour shifts with critically ill patients, and social worker (Luce & Raffin, 1988). This inclusion builds team cohesion and respect. After all parties are informed of the decision, plans are made to discuss treatment plans with the patient and family members. It is essential to search for unanimity among all parties. If this cannot be obtained, members should seek assistance from persons skilled with interpersonal interactions (Luce & Raffin, 1988). The primary physician is to write a DNR order first and then the order to withhold or withdraw appropriate therapies. (Smedira et al., 1990). Specifically stated in the decision process should be the reason for the order - the presence of brain death, poor prognosis, the futility of

continued intervention, extreme suffering and request by patient or family (Smedira et al., 1990).

The discussion with the patient and family members should include a clear picture of the intensive care unit environment. This would include the invasive monitoring, activity around the clock, restrictions on visitors, and intubation inhibiting communication with family members (Ruark & Raffin, 1988).

The environment is important to patients expected to die. Trained staff should be available to provide emotional support and address any feelings of guilt and unrealistic hopes for medical miracles ... listening to patient's (family's) hopes and fears, reassuring him or her that the doctors will continue to be there and provide appropriate therapy... (Blackhall, 1987). "Even though aggressive curative techniques are no longer indicated, professionals and families are still called on to use intensive measures - extreme responsibility, extraordinary sensitivity, and heroic compassion" (Wanzer et al., 1989).

In the study by Smedira et al. (1990), mechanical ventilation and vasopressors were the most common medical interventions withdrawn or withheld and supplemental oxygen, sedatives and analgesic drugs were given to most of the patients during the process. Since mechanical ventilation is one of the most commonly withheld or withdrawn life sustaining intervention in the intensive care



unit, it is important the Respiratory Care Practitioner be involved and contribute to the decision.

The RCP, as a part of the team, must possess the communication skills necessary to assist the patient and family with concerns regarding the life support system. The RCP is frequently at the bedside providing care and making appropriate changes in orders and will often be made aware of concerns by the patient and family members. It is the responsibility of the RCP to bring observations such as anxiety, fear and confusion to the attention of other team members. Because of the close working conditions of the RCP with patients and family members, they often are recipients of displaced anger. The practitioner must be equipped with coping mechanisms to handle and understand these feelings. There must be support systems in place for the RCP as well as the other team members who may become overwhelmed by the emotions they may be experiencing including those due to their own ethical and moral conflicts.

"Physicians are not obliged to violate their personal moral views on medical care so long as patients' rights are served" (Miles, 1991). Miles et al. (1989) referred to the President's Commission noting, a health professional is not "obligated to accede to the patient in a way that violates ... the provider's own deeply held moral beliefs." The authors continue, "As society upholds the rights of

patients to forgo treatment, it should also avoid encroaching in these missions and on the moral sentiments of individual health care professionals."

Every effort by all team members must prevail to provide the patient with the utmost humane treatment. "Above all, sensitive reactions to the patient's need for relief of pain, communication, and human touch are of the utmost importance" (Schneiderman & Spragg, 1988).

The foundation has been set through studies and court rulings for the withdrawing and withholding of life support systems considered futile. The systems to be withheld or withdrawn have been identified. Guidelines have been established for the process by which to withhold or withdraw such systems. The rights of the patient, family and care providers have been explored.

### Rationale of study

Previous studies have focused on the physician's role in patient care management (e.g., Luce & Raffin, 1988; Smedira et al., 1990; Ruark & Raffin, 1988; Tomlinson & Brody, 1990; Schneiderman & Spragg, 1988; Tomlinson & Brody, 1988; Blackhall, 1987; Miles, 1991) and other studies have included discussions of the necessity of including the health care team in the decision making processes (Luce & Raffin, 1988; Smedira et al., 1990; Ruark & Raffin, 1988; Murphy, 1988; Miles, 1991). The "health care team" usually included the primary and support physicians, nurses and social workers. The Respiratory Care

Practitioner was not specifically mentioned in the "team." With the increasing use of Therapist Driven Protocols (TDPs) and multidisciplinary patient care management, it is extremely important that the RCP not only be included in the patient care rounds but also in all discussions and plans for patient care management. This becomes especially important when considering the withholding and withdrawing of life support systems. Their attitude toward a particular patient population will be very important when offering an opinion to the team for the patient management plan of care.

As a human resource management issue, the involvement of the Respiratory Care Practitioner in the decision making process may increase their perceived value to the organization. The RCP's involvement may enrich their job through increased "depth" of responsibilities and thus provide job satisfaction. The inclusion of the RCP as a member of the health care team may offer increased satisfaction to the individual for the recognition and respect received as a part of their role in patient care management. If the individual has a high degree of job satisfaction, there may be a higher degree of willingness to stay with the organization. All of these are human resource related issues that impact the effectiveness and value of the Respiratory Care Practitioner employee.

### Purpose of study

The purpose of this study was to ascertain the attitude of the Respiratory Care Practitioner (RCP) caring for the life support systems administered to the young, middle aged and elderly patients having little hope for recovery. This study was designed to begin the process of outlining guidelines for the use of life sustaining therapies with the inclusion of the RCP on the team that helps to determine the patient care plan. Life support is not necessary nor is it feasible in all clinical situations. The patient's age may be one of several characteristics to be considered when identifying the patient population and establishing criteria for the application or withholding of certain therapies.

The hypothesis of this study was that the patient's age will affect the RCP's attitude in favor of withholding life support measures from the elderly patient as compared to the middle aged and young patients.

### Method

#### Subjects

The subjects in this paper included 200 Respiratory Care Practitioners (RCPs) from Southern California hospitals. A mailing list was obtained from the California Society of Respiratory Care (CSRC). The Executive Director of the CSRC generated the mailing list to exclude members of the CSRC who were Respiratory Care students. Also excluded from this list were Associate members.



Associate members are members who maintain membership status with the CSRC but are not actively practicing Respiratory Care. Included in this list were Southern California members on the "active" status, only. The mailing list contained 798 labels with the names and mailing addresses of active members.

From this mailing list, every third member's label was selected. A survey was mailed to that member. This selection process continued until 200 surveys were mailed. Each survey was mailed with a return addressed, postage paid envelope. The goal of this survey was to receive 200 responses. When 200 responses were not received from the initial mailing, additional surveys were mailed. The same selection process was used with the remaining membership labels (selecting every third member's label) until 200 responses were received.

There was no specific age, education or training requirements of the participants. Their ages ranged from 18 to 65 years. The education range was from a 10 month to a 4 year accredited program of Respiratory Care. The participants were male or female and of any nationality. The participating RCPs were either neonatal or adult care specialists, worked in routine (floor) care, intensive care or special care units including open heart, burn, etc.

The participants' completion and return of the survey served as their informed consent. Subjects were randomly assigned and grouped according to their answers to the scenario questions regarding the patient's age and the RCP's

attitude toward sustaining life support. All participants were treated in accordance with the ethical standards of the APA.

### Measures

The measures of this study included: Independent Variables - Age of Patient as described in clinical scenarios. Age categories included young, middle aged, and elderly patients. The Dependent Variables - Attitude Toward Life Support based on response to scenarios. A Likert scale was used with (1) as the low score (not at all important to maintain life support) and (5) as the high score (very important to maintain life support). The scenarios used in the survey were designed to represent realistic cases presenting to an Emergency Room.

### Instrument

A survey was developed by the researcher in this study to ascertain the RCP's attitude regarding withholding/withdrawing and maintaining life support. A copy of this survey can be located in Appendix B accompanying this study. Six (6) scenarios of possible clinical situations were presented. Three (3) scenarios numbered 1, 3, and 5 were used in the study and directly addressed the variables of this study. In all three scenarios, the patients were involved in a car accident that resulted in injuries requiring life support measures. Each scenario was intended to present the same information with the only difference being the age of the patient. Three (3) additional scenarios numbered 2, 4, and 6 were included as a diversion



from identifying actual variables for this study. This was done in an effort to gain the actual, unbiased opinion of the RCP regarding his or her attitude toward the age of the patient and the treatment plan most representing his or her attitude toward life support. All three distracter scenarios included patients whose illnesses would require life support systems as a part of their medical treatment plan.

The survey should have taken the Respiratory Care Practitioner approximately fifteen (15) minutes to complete. A cover letter preceded the instructions. This letter explained that the survey had been generated as a part of a Master's research project. Included in this cover letter was general information about completing the survey without revealing the specific variables. Such information included; the consent of person to participate in survey, anticipated length of time to complete survey and anonymous use of survey results. Also included was information on how to contact the researcher if the participant wanted to receive a copy of the completed survey.

Instructions for completion accompanied each survey. This included how to select each answer on the Likert scale after each scenario and where to return the completed form (see Appendix B for instructions). A "comments" section was provided after each scenario to allow the participant to include additional information, if desired.

## Procedures

Prior to the distribution of the survey, a mailing list of members of the California Society of Respiratory Care (CSRC) in the Southern California region, was obtained. A cover letter was attached to each survey identifying it as a research project (see Appendix A for a sample cover letter and Appendix B for a sample of the survey). Each participant was offered the opportunity to contact the researcher should they desire the results after the paper was completed. The surveys were completed anonymously and returned in the addressed and postage paid envelope included with each survey. After 200 survey responses were received, the survey results were tallied.

## Data analysis

Five (5) choices were offered as an answer for each scenario ranging from "not at all important" represented by choosing number (1) to "very important" represented by number (5) to maintain life support for the patient. The scores were tallied and grouped according to responses relevant to the patient's age and treatment path for scenario questions numbered 1, 3 and 5. For each age level, an average score was obtained indicating the degree of support for maintaining life support for that age patient. An ANOVA (Analysis of Variance) test was performed on the results to see if there were any significant differences in the average scores for each patient age group and the RCP's attitude toward

maintaining life support regarding the three (3) patient age groups. Also tallied were the responses from the distracter questions numbered 2, 4, and 6. This was done to include any influences that may have occurred due to their inclusion in the survey. Fifteen (15) individual t-tests were performed on the survey responses to see if a more specific reason could be identified through the calculation of these tests.

## Results

A total of 410 surveys were mailed to Respiratory Care Practitioners who were active members of the California Society of Respiratory Care (CSRC). Once 200 completed surveys were received, no additional surveys were included in the results. Surveys received over the 200 were discarded, unopened. The return percentage was 49% (200/410).

The results of this study revealed a statistically significant effect between the age of the patient and the RCP's attitude toward withdrawing life support. An ANOVA was performed on all six (6) patient scenarios from the survey to obtain the means and standard deviations from the 200 survey responses. Although scenario 1, scenario 3 and scenario 5 were the target patients of this study, tabulation of all six patient scenarios was performed to include any influences from scenario 2, scenario 4 and scenario 6 on the target scenario responses. These results are presented in Table 1.



Table 1. Mean Scores and Standard Deviations to Maintain Life Support from all Six Patients.

Patient Number	# of Responses	Mean	Standard Deviation
1	200	2.92	1.57
2	200	3.18	1.43
3	200	2.84	1.51
4	200	2.72	1.44
5	200	1.87	1.26
6	200	2.59	1.41

The mean range was 1.87 to 3.18. The lowest mean was associated with the elderly patient in scenario 5 and the highest was for the young patient in scenario 2. The remaining means showed a pattern of scores becoming lower as the patient's age increased.

An ANOVA was performed in order to determine whether significant differences occurred when comparisons were evaluated based on the three target groups in scenario 1, scenario 3 and scenario 5 together. A significant difference was found ( $F_{(5, 1194)} = 32.37, p < .000$ ), an indication that there would be a preference for preserving life based on age in the three target situations. An



ANOVA was then used to determine whether there was a difference of opinion about life support among all six patient types from all six survey items. The overall  $F$  indicated there was a significant difference of opinion among Respiratory Care Practitioners concerning whether life support should be continued among the six patient types ( $F_{(5,1194)} = 19.19, p < .000$ ). The significant difference was the younger the patient the stronger the opinion to maintain life support.

T-tests were conducted to determine whether significant differences occurred between the three target groups. Results of the t-tests indicated that no significant differences were found between the infant in scenario 1 and the adult in scenario 3 ( $t_{(398)} = .52, p < .60$ ). There were, however, significant differences found between the scores of the infant in scenario 1 and the elderly adult in scenario 5 ( $t_{(398)} = 7.38, p < .0000$ ) and for the comparison between the adult in scenario 3 and the elderly woman in scenario 5 ( $t_{(398)} = 6.97, p < .0000$ ). Since the highest mean was found for the infant, there was a clear indication of preference for preserving the life of the patient whose life potential was perceived as "greater" than the other two patients. The secondary preference for life preservation was found for the 30 year old adult who was considered to have the next most promising potential for life.

Individual t-tests were performed to determine where the differences existed among the comparisons of the six patient types. A total of 15 t-tests were

calculated. Six of the comparisons were not significantly different. The comparison of the two infants (scenario 1 and scenario 2), the comparison of the infant and the woman in the car accidents (scenario 1 and scenario 3), the comparison of the infant in the car accident and the adult leukemia patient (scenario 1 and scenario 4), the comparison of the two 30 year old adults (scenario 3 and scenario 4), the comparison of the adult in the accident and the elderly man on the ladder (scenario 3 and scenario 6), and the comparison of the adult leukemia patient and the elderly man (scenario 4 and scenario 6) showed no significant differences in the opinions about the continuation of life support.

Nine t-test comparisons showed significant differences among RCPs about continuing life support. Significant differences were found in the means for the baby in the car accident in scenario 1 and the 84 year old woman in the car accident in scenario 5 ( $t_{(398)} = 7.38, p < .0000$ ). Similar differences were found when the baby in the car accident from scenario 1 was compared to the 84 year old on the ladder in scenario 6 ( $t_{(398)} = 2.25, p < .025$ ). Since the mean for the patient in scenario 1 was one of the highest means, it can be concluded that a preference existed among the RCPs for preserving life for the infant overwhelmingly over that of an elderly person.

Similar differences were also found when the scores for the sick infant in scenario 2 were compared to the adult in the car accident in scenario 3 and the two

elderly patients in scenario 5 and scenario 6. The sick infant in scenario 2, when compared with the adult in the accident in scenario 3, was significantly different ( $t_{(398)} = 2.28, p < .023$ ). The score for the sick infant in scenario 2 was also significantly different from the score for the ill adult in scenario 4 ( $t_{(398)} = 3.17, p < .0016$ ). The comparison between the score for the sick infant in scenario 2 and the elderly woman in the car accident from scenario 5 were significantly different ( $t_{(398)} = 9.69, p < .0000$ ). Similar results were found for the comparison between the sick infant in scenario 2 and the elderly man on the ladder from scenario 6 ( $t_{(398)} = 4.15, p < .0000$ ). In all cases, the mean for the infant was higher than the other patients in each comparison indicating a preference for preserving the life of the infant over the other patients.

Significant differences were found when comparing the adult and the elderly woman in the car accidents in scenario 3 and scenario 5 ( $t_{(398)} = 6.97, p < .0000$ ), with the preference for maintaining life support on the adult patient in scenario 3. The next comparison was between the ill adult in scenario 4 and the elderly woman in scenario 5 ( $t_{(398)} = 6.28, p < .0000$ ), with the preference for maintaining life support on the adult patient in scenario 4. The final t-test comparison was between the elderly woman in the car accident from scenario 5 and the elderly man in scenario 6 ( $t_{(398)} = -5.34, p < .0000$ ). In this comparison,



the preference for maintaining life support was for the elderly man over the elderly woman.

A "comment" section was provided in each scenario for the RCP to include any additional information. While reviewing this information, eleven items were repeated among several of the survey participants. Those eleven items were categorized and tallied. These categories were: 1) Decision should be made by family and/or doctor, only; 2) Age is not a factor; 3) Possibility for improvement, maintain support as long as signs of life; 4) Need more information/tests; 5) Allow time for the family to accept outcome and give informed consent; 6) Maintain life support to preserve organs for possible donation; 7) Maintain support but make DNR status; 8) Preserving life would result in poor quality of life; 9) Continuing would prolong suffering; 10) Too expensive to maintain support (financial & emotional); and 11) Evaluate advanced directives. This information may lend insight to the participants' responses regarding maintaining life support. This information is presented in Table 2.



Table 2. Results of "Comments."

Comment Category	Survey Response Each Scenario					
	#1	#2	#3	#4	#5	#6
Decision should be made by family and/or doctor, only	3%	3%	3%	2%	3%	3%
Age is not a factor	2%	1%	2%	1%	3%	2%
Possibility for improvement, maintain support as long as signs of life	8%	5%	7%	5%	4%	5%
Need more information/tests	10%	13%	8%	6%	4%	15%
Allow time for family to accept outcome and give informed consent	5%	3%	2%	3%	5%	4%
Maintain support to preserve organs for possible donation	8%	4%	9%	3%	1%	1%
Maintain support but make DNR status	2%	2%	2%	1%	1%	1%
Preserving life would result in poor quality of life	6%	5%	4%	3%	4%	2%
Continuing would prolong suffering	3%	2%	2%	4%	2%	2%
Too expensive to maintain (financial and emotional)	4%	2%	3%	3%	3%	1%
Evaluate advanced directives	-	-	1%	2%	4%	3%

## Discussion

The range of means showed a definite preference toward maintaining life support for the younger patient. This preference diminished with age. Although the highest mean was 3.18 for the infant in scenario 2, the elderly patients' means were significantly lower. The overall low means might imply that the RCP's decision to withhold or withdraw life support in certain patient populations is influenced by other issues including the patient's age.

The comparison of the two infant cases revealed no significant difference in the RCP's decision to maintain life support. These two scores had the highest means, therefore, the RCP was in favor of continuing to provide supportive care to the infants. When comparing the infants to the elderly patients' scenarios, a significant difference was shown in favor of supporting the preservation of the infants' life. Although the means were lower for the middle aged patients, they were not significantly lower than the target infant's mean score. This may imply that the patient's medical condition and diagnosis had some influence on the RCP's attitude toward preserving life.

There was no significant difference between the two middle aged patients although their mean scores were lower (on a scale of 1-5) than the infant scores indicating a relatively low importance toward the maintaining of life support. This implied that the RCP was willing to continue limited support equally to these

patients. Although there was reported significance in preserving life support for the middle aged patients over the target elderly patient in scenario 5, there was no reported significance between both middle aged patients and the elderly man in scenario 6. The mean score for the elderly man in the distracter scenario 6 was lower, however, on the scale of 1-5 for maintaining life support than both middle aged patients. This implies that the patient's medical condition, preceding illness circumstances and future may have influence on the RCP's decision. The patient's age was not a significant determinant for the decision to preserve life.

Significance was found between both middle aged patients and the elderly target patient in scenario 5. Age did appear to be an influence on the decision to maintain life support for the middle aged patients over the elderly patient. When comparing the two elderly patients, the RCPs favored preserving the life of the elderly man in the distracter scenario 6 over the elderly woman in the target scenario 5. The fact that the patient appeared to have lived an active life prior to his accident may have influenced the responding RCP's decision.

The analysis of the three target groups showed significant preference toward maintaining life support for the infant and middle aged patients over the elderly patient. Age appeared to be a factor. The RCPs overwhelmingly favored preserving the life of the infant and the middle aged person over the life of the elderly patient.



The "comment" sections provided on each scenario revealed interesting information that may lend importance to the RCP's decision making process. Very few RCPs (3% for the target elderly patient in scenario 5) stated that age did not influence their decision and should not be a factor. Some RCPs believed that the decision is solely between the physician and the family, excluding the RCP from the decision making process. Several of the RCPs held out for the possibility of improvement or medical miracles or to continue support and limit resuscitative efforts. Other RCPs felt that time needed to be given to the families to accept the grim outlook on the patient's future and quality of life.

The largest percentage of responses came in the category of additional testing required before offering their professional opinion. This implies that the RCP does not want to rush the decision to withdraw life support but rather make an intelligent, informed decision based on solid scientific information. There was concern for the suffering of the patient and family including physical, emotional and financial. Some of the respondents mentioned the preservation of life for the donation of organs. In an age of advanced directives, it was quite timely that several of the respondents mentioned the assessment of the patient's advance wishes regarding life support measures.

RCPs, physicians and other health care providers may not choose to provide aggressive therapy for patients whom they feel will not recuperate to a



quality life. Past practice may have administered life support measures indiscriminately and without solid criteria. Once life support measures have been implemented it is often difficult to remove. Since the hypothesis of this study was supported through the results of the survey, age appeared to be a consideration in the RCP's decision of which patients receive the aggressive treatment of life support and which do not. Institutions may want to begin to prioritize the administration of life saving measures with the criteria of age serving as a factor for a treatment "triage" plan. This decision may be very critical especially in situations where resources are limited.

The Respiratory Care Practitioner is a key player in the multidisciplinary care team. Their opinions and suggestions for patient care management are very critical and important. They may be especially important when deciding to implement, withhold or withdraw life support measures. This study indicates that age may be a factor that the RCPs consider when making a decision. Since these decisions are often very emotional and difficult, having the RCP's qualified input may help with the decision making process.

From the human resource management perspective, the involvement of the Respiratory Care Practitioner in the decision making process may increase their perceived value to the organization. When making team-based decisions, it is the expectation that everyone shares in the responsibility of reaching a decision and

implementing the agreed-upon action. The RCP's involvement may enrich their job and provide job satisfaction through increased input and responsibilities. If the individual has a high degree of job satisfaction, there may be a higher degree of willingness to stay with the organization. The inclusion of the RCP as a member of the health care team may add valuable insight into the decision making process. The RCP will be a part of the decision making regarding the administration of life support and will therefore have an influential role in patient care management.

A limitation to this study was that the RCPs selected were from a specific geographic location - California. Although the information was valuable and showed a distinct preference for treatment paths based on patient's age, this does not necessarily mean the hypothesis is true for all states and countries. Future studies may address if there exists a difference in attitude because of the RCP's geographic location. A study might address the type of illness or the situation precipitating the illness to see if there was any significant difference in the RCP's recommendations. Another study might assess if historical factors, for example, a sick family member or the RCP's specialty area such as neonatal specialist, pediatric specialist, open heart surgery specialist, influenced the RCP's suggested treatment plan.

There may have been some bias in the wording used in the scenarios regarding the patient's prognosis, such as "grim," "poor" and "not good" which

may have influenced the responses. Not every scenario contained identical words. Some used the word "grim" while another used the word "poor" or "not good." The researcher of this study developed the scenarios based on common usage of words in clinical conditions. The instrument was tested on a limited number of RCPs in the researcher's work environment prior to administration in the study.

There was, however, consistency in the use of the word "grim" throughout the target scenarios (1, 3, and 5). The other three scenarios included the terms "not good" in scenario 2 and "poor" in scenarios 4 and 6. It may be of interest to future researchers to see how these words may influence the attitudes of others regarding the application of life support systems.

The probability level ( $p$ ) was not changed as some statisticians may suggest when multiple tests are reported on the same data. This would have changed the reported significance of the results of the comparisons of scenario 1 and 6 ( $p < .025$ ), and comparisons of scenario 2 and 3 ( $p < .023$ ). Lowering the probability level would not change, however, the statistical differences between the target groups. This was because hypothesis was strongly reported at  $p < 0.0000$ .

The Respiratory Care Practitioner is a valuable member of the health care team. His or her input is very important in the management of patient care. Based on the results of this survey, the RCP does feel that age has significance on the application of life support systems specifically for the elderly patient. Soliciting the

RCP's opinion can assist in directing the care of this often very difficult and emotional decision to withhold or withdraw life support.



## Appendix A

Cover Letter

Dear Respiratory Care Practitioner:

I would like to ask for your assistance by completing the attached survey. Your participation is voluntary and will remain anonymous. I am gathering data for my master's degree thesis.

This survey should take approximately fifteen (15) minutes to complete. Please give each question thought before answering. No individual scores will be reported, only group scores will be tallied and recorded.

Remove this cover letter before returning the survey. Place the completed survey in the self-addressed and stamped envelope provided. Should you desire, copies of the completed project can be obtained by contacting me at: (213) 667-7097. Thank you for your cooperation.

Sincerely,

Deborah Ortiz

## Appendix B

### Survey

#### Instructions

The following scenarios involve the use of life support systems. Please read each one and respond with the answer you feel most appropriate. A "comments" space has been provided after each scenario. Do not sign your name to this survey. No individual scores will be reported, only group scores will be included in the final tally. Thank you for your participation in this survey.

1. A 3 mo. old baby was riding in a car with her mother and great-grandmother. Another car crossed the divided highway and hit their car head - on. The baby was thrown from the car. She was transported to a hospital and placed in the Pediatric ICU on life support systems. X-rays revealed massive head trauma. A head CT scan showed a massive bleed. An EEG was performed and results showed very little brain activity. An operation is not an option due to the location of the bleed. The physician informed the family the outlook was grim. Given the details of this particular case, in your professional opinion, how important do you feel it is to maintain life support?

Not at all Important      Undecided      Very Important

1      2      3      4      5

Comments:

2. The paramedics were called to the home of a 3 month old baby who was apneic. The mother explained that the baby had not been eating well for the past 3 days and had diarrhea for the same period of time. The baby's history included that the baby was born premature and had spent 2 months in the NICU. The paramedics attempted CPR and were able to regain a heartbeat, however, respirations had to be supported. The baby was admitted to the hospital. Several tests were performed and the results showed a large intracranial bleed. The doctors stated that the prognosis was not good. The baby was placed on life support systems. Given the details of this particular case, in your professional opinion, how important do you feel it is to maintain life support?

Not at all Important

Undecided

Very Important

1

2

3

4

5

Comments:



3. A 30 year old woman was driving a car with her baby and grandmother. Another car crossed the divided highway and hit her car head - on. The woman was thrown from the car. She was transported to a hospital and placed in the Intensive Care Unit on life support systems. X-rays revealed massive head trauma. A head CT scan showed a massive bleed. An EEG was performed and results showed little brain activity. An operation is not an option due to the location of the bleed. The physician informed the family the outlook was grim. Given the details of this particular case, in your professional opinion, how important do you feel it is to maintain life support?

Not at all Important

Undecided

Very Important

1

2

3

4

5

Comments:

4. A 30 year old leukemia patient had been awaiting a matching bone marrow donor. Before such a match could be found, he had a full cardiac and pulmonary arrest. CPR was initiated. The patient was returned to a spontaneous heart rhythm, however, the patient never regained consciousness or spontaneous respirations. The physician met with the family and explained that even if a matching donor could be found, the prognosis was poor. Given the details of this particular case, in your professional opinion, how important do you feel it is to maintain life support?

Not at all Important

Undecided

Very Important

1

2

3

4

5

Comments:

5. An 84 year old woman was riding in a car with her granddaughter and great-granddaughter. Another car crossed the divided highway and hit her car head - on. The woman was thrown from the car. She was transported to a hospital and placed in the Intensive Care Unit on life support systems. X-rays revealed massive head trauma. A head CT scan showed a massive bleed. An EEG was performed and results showed little brain activity. An operation is not an option due to the location of the bleed. The physician informed the family the outlook was grim. Given the details of this particular case, in your professional opinion, how important do you feel it is to maintain life support?

Not at all Important

Undecided

Very Important

1

2

3

4

5

Comments:

6. An 84 year old man was working on a ladder outside of his home. As he tried to climb down, he lost his footing. When he fell to the ground, he hit his head on a large rock. By the time his family found him, he was unconscious and had lost a great deal of blood. The paramedics were called. There were no apparent signs of respirations and his blood pressure was very low. CPR was initiated. The patient arrived at the hospital and was placed on life support. The doctor consulted the family and stated that the patient had a poor prognosis. Given the details of this particular case, in your professional opinion, how important do you feel it is to maintain life support?

Not at all Important

Undecided

Very Important

1

2

3

4

5

Comments:



## References

1. Luce JM, Raffin TA. Withholding and withdrawal of life support from critically ill patients. Chest 1988; 318: 25-30.
2. Annas GJ. Nancy Cruzan and the right to die. New England Journal of Medicine 1990; 323: 670-673.
3. Lantos JD, Miles SH, Silverstein MD, Stocking CB. Survival after cardiopulmonary resuscitation in babies of very low birth weight: is CPR futile therapy? New England Journal of Medicine 1988; 318: 91-95.
4. Miles SH, Singer PA, Siegler M. Conflicts between patients' wishes to forgo treatment and the policies of health care facilities. New England Journal of Medicine 1989; 321: 48-50.
5. Blackhall LJ. Must we always use CPR? New England Journal of Medicine 1987; 317: 1281-1285.
6. Schneiderman LJ, Spragg RG. Ethical decisions in discontinuing mechanical ventilation. New England Journal of Medicine 1988; 318: 984-988.
7. Ruark JE, Raffin TA. Initiating and withdrawing life support. New England Journal of Medicine 1988; 318: 25-30.
8. Wanzer SH, Federman DD, Adelstein SJ, Cassel CK, Cassem EH, Cranford RE, Hook EW, Lo B, Moertel CG, Safar P, Stone A, Eys JV. The physician's

- responsibility toward hopelessly ill patients: a second look. New England Journal of Medicine 1989; 320: 844-849.
9. Tomlinson T, Brody H. Ethics and communication in do-not-resuscitate orders. New England Journal of Medicine 1988; 318: 43-46.
10. Tomlinson T, Brody H. Futility and the ethics of resuscitation. JAMA 1990; 264: 1276-1280.
11. Blendon RJ. The public's view of the future of healthcare. JAMA 1988; 259: 3587-3593.
12. Taffet GE, Teasdale TA, Luchi RJ. In-hospital cardiopulmonary resuscitation. JAMA 1988; 260: 2069-2072.
13. Murphy DJ. Do-not-resuscitate orders: time for reappraisal in long-term-care institutions. JAMA 1988; 260: 2098-2101.
14. Schiedermayer DL. The decision to forgo CPR in the elderly patient. JAMA 1988; 260: 2096-2097.
15. Crawford SW, Schwartz DA, Petersen FB, Clark JG. Mechanical ventilation after marrow transplantation: risk factors and clinical outcome. American Review of Respiratory Disease 1988; 137: 682-687.
16. Miles SH. Informed demand for "non-beneficial" medical treatment. New England Journal of Medicine 1991; 325.

17. Danis M, Green M, Southerland LI, Patrick DL. Patient and family preferences for medical intensive care. JAMA 1988; 260: 797-802.
18. Smedira NG, Evans BH, Cohen NH, Lo B, Cooke M, Schechter WP, Fink C, Epstein-Jaffe E, May C, Luce J. Withholding and withdrawing of life support from the critically ill. New England Journal of Medicine 1990; 322: 309-315.
19. Patrick DL, Danis M, Southerland LI, Hong G. Quality of life following intensive care. Journal of general internal medicine 1988; 3: 218-223.54