# Medical Ethical Issues in Intensive Care

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### Section Headings



## A. Preface

I first came to study medical ethics in Jerusalem on sabbatical from the University of Miami in 1986–1987. Prof. Avraham Steinberg was one of my mentors. I will forever be indebted to him for showing me how to view ethical issues and tensions critically and help patients and families through their difficulties. I have since been involved in several medical ethical studies in the intensive-care unit (ICU) at Hadassah and in Europe. In honor of Prof. Avraham Steinberg's 60th birthday, I am writing this chapter, which summarizes some of our work at Hadassah. With his help, I became known in the area of medical ethics. His support of my sabbatical in Israel paved the way for me to make aliya with my family and contribute to patient care and Israeli society. Therefore, I emphasize my work in Israel.

Ethical issues are extremely common in the intensive-care environment. Issues and practices have become more important and noticeable as medical technology has advanced, the patient-physician relationship has changed, cases have gone to court, and the public has become more knowledgeable. Attitudes and practices differ in countries with varied religious, professional, and legal perspectives. Our investigations primarily involved the ethical areas of end-of-life decision making and triage.

## B. End-of-Life Decisions

### 1. Introduction

Despite great advances in medical technology and therapeutics, some patients admitted to ICUs do not survive. Several decades ago, most patients died in ICUs after cardiopulmonary resuscitation. Over the years, changes have occurred in societal and medical attitudes and practices. The withholding or

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withdrawing of life-sustaining interventions in intensive-care cases around the world is common and has increased. Most deaths in intensive-care units occur after the forgoing of life-prolonging therapies, and most patients do not undergo cardiopulmonary resuscitation. According to Jewish law (Halacha), human life is of infinite value. In addition, one may not hasten the death of the terminally ill by such methods as withdrawing continuous, life-sustaining therapies. Withholding such treatments, however, is permitted. In Israel (as opposed to many other countries), the withdrawal of mechanical ventilation leading to death in terminal, critically ill patients is now illegal since the Dying Patient Act (or the "Steinberg Law," as it has been called) was enacted in 2005. As continuing unwanted ventilatory treatment would prolong suffering, the Law allows the possibility of changing the ventilator from a continuous form of treatment to an intermittent form by connecting a timer and allowing the ventilator to stop intermittently. Before the law took effect, however, we tested the hypothesis that physicians in Israel, and particularly in our ICU, withhold and rarely withdraw life-prolonging therapies. The study prospectively evaluated the withholding and withdrawing of life-sustaining treatments and the dying process at Hadassah's General Intensive-Care Unit (GICU).

## 2. Methods

All patients admitted to the Hadassah University Medical Center's GICU from November 15, 1994, until July 31, 1995, were eligible to participate in this study and were evaluated prospectively. Whenever a patient died and/or had medical interventions withheld or withdrawn, the attending critical-care physician completed a form including the patient's age, sex, diagnosis, and acute and underlying illnesses; the physician's name, reason for forgoing treatment, and types of forgoing; and dates and times of admission to the intensive-care unit, the forgoing decision, ICU discharge, and hospital death.

## 3. Results

Over the 8.5 months, 385 patients were admitted to the ICU. Fifty-seven died and/or had the forgoing of life-sustaining treatment. Fifty-six of these patients (98%) received mechanical ventilation, and 48 (84%) received vasopressor agents. Cardiopulmonary resuscitation was performed without forgoing therapy in 5 of these 57 cases (9%), and only one patient had an unexpected cardiac arrest. Forgoing life-sustaining treatment occurred in the cases of 52 of the 385 patients (13.5%) and 91% of the 57.

The mean age of the 52 patients was 57±3 years. There were 28 men and 24 women. The mean ICU stay was 9.1±1.6 days, and the mean hospital stay after admission to intensive care was 9.9±1.7 days. The time from admission to the forgoing of life-sustaining treatments was 6.1±1.1 days. This period lasted 3.6±0.9 days for 22 patients with neurologic injuries and 8.0±1.7 days for 30 patients without head injuries, $p = 0.05$. All patients undergoing cardiopulmonary resuscitation died in ICU. Forty-eight of the 385 patients (12%) died in intensive care, 8 patients (2%) who had the forgoing of life-sustaining treatment in intensive care died after transfer to a hospital ward, and

one patient who had the prospective withholding of intubation, ventilation, vasopressors, and cardiopulmonary resuscitation survived.

Therapy was withheld in 48 cases, including 48 cardiopulmonary resuscitation, 32 vasopressors, 13 blood products, 10 dialyses, 2 surgeries, and 1 prospective intubation and ventilation. Intravenous fluids were continued but not increased in 41 patients, and blood drawing ceased in 10. Fourteen patients had the withholding of cardiopulmonary resuscitation but no other therapies. Both vasopressors and cardiopulmonary resuscitation were withheld from 20 patients. Life-sustaining treatment was withdrawn from 4 patients with brain death. No patient had terminal weaning. No sedation was withheld or withdrawn from a conscious patient. Fifteen patients had continued or increased sedation, and 32 required less or no sedation. All patients were unconscious secondary to their underlying disorder or sedation. No antibiotics, nutrition, or fluids were withheld from anyone. The major reasons for forgoing life-sustaining treatment in these cases were neurologic injuries, multiple organ system failure, and sepsis. The time from the forgoing of life-prolonging therapy to death was 2.9±0.6 days. Of the 48 patients from whom therapy was withheld, 21 (44%) died within 24 hours, and 31 (65%) within 48 hours.

## 4. Discussion

Throughout the world, terminal, critically ill patients die after the withdrawing of life-sustaining therapies or terminal weaning. In Israel, by contrast, though life-prolonging treatment is very commonly withheld, it is withdrawn only from patients meeting brain-death criteria. Fluids and nutrition are not withheld or withdrawn and are considered different from other medical interventions in the present study. This is the opinion of only a minority of American and European physicians. Many ethicists, physicians, and the U.S. President's Commission have rejected a moral distinction between withholding and withdrawing life-sustaining treatment. In addition, the commission believes that if treatment once started could not be stopped, serious adverse consequences would occur, including failure to begin treatment that might save a patient. The present study showed no evidence of such. Despite the lack of intervention withdrawal among terminal ICU patients, Israeli society's commitment to the sanctity and preservation of life led to initial aggressive treatment in the majority of patients from whom therapies were later withheld. The percentage of patients receiving mechanical ventilation and vasopressor therapy was higher than in other studies. There was no difficulty in commencing treatment of many severely ill patients despite the knowledge that withdrawal would not take place. In fact, 20 of the patients were age 70 or older, and nine were 80 or older. Despite early aggressive treatment, doctors were able to subsequently withhold treatment. In fact, forgoing occurred earlier in the present study (6.1 days after admission to intensive care than in studies in England (11.2 days) and South Africa (9.6). The earlier time in this study may be related to the high incidence (33%) of patients with head trauma and severe neurologic injury.

The type of life-support interventions to be forgone is not only a medical decision but also a religious and ethical one. Although intensive-care patients cannot easily demonstrate autonomy, they or their surrogates may want to be involved in deciding how the patient will die. This is especially true if withdrawing therapy is contrary to the patient's religious and ethical value system. Many Jewish and non-Jewish physicians and patients may be pleased to know that not only withdrawing but also withholding treatment is an acceptable alternative. Although the forgoing of life-sustaining treatments, as practiced in our ICU (which may or may not be representative of other Israeli ICUs), may not be appropriate for the majority of patients and/or health care professionals around the world, it may be right for some.

The medical, ethical, social, and religious values and opinions that are important in end-of-life decisions may be quite varied amongst different patients but also among different professionals. Many physicians don't realize that the withdrawal of life-prolonging therapies such as mechanical ventilation used to be a deviation from standard medical practice or that alternatives to withdrawing therapy or terminal weaning exist. There has been a shift among intensivists to withdraw more than withhold life-prolonging treatments.

The present study demonstrates that most critically ill, terminal patients die within 48 hours after therapies are withheld but not withdrawn. Therefore, this option should be considered and respected. The management of death in the ICU requires attention to the ethnic and social circumstances of all those affected by the decision-making process. In some cases, active withdrawal of therapies may not be acceptable, and the present study demonstrates that withholding is a viable alternative. Continued treatment of terminal, critically ill patients is expensive but may be justified in certain situations.

## C. Triage

### 1. Introduction

Since the introduction of intensive-care units in the 1960s, their numbers have increased in hospitals throughout the world. Although critical care accounts for approximately 8% of hospital beds in the United States, 28% of charges for acute hospital care come from intensive care and constitute >1% of the gross national product. Unfortunately, higher costs are incurred by non-survivors of intensive care. Ideally, patients should be admitted to intensive care if they can benefit from a decreased risk of death. Intensive-care units provide sophisticated technologies and therapies by specially trained medical and nursing personnel that are believed to decrease mortality. Nevertheless, intensive-care units may be detrimental to patients by providing overly aggressive treatments that increase the likelihood of developing infections by resistant organisms. Hopelessly ill patients who will die after admission to intensive care should not be transferred to intensive care. Neither should patients requiring anticipatory monitoring who will survive even if they are not admitted. Unfortunately, the indications for admission to intensive care remain

poorly defined, and identifying patients who can benefit from such treatment is extremely difficult. The demand for medical services such as critical care often exceeds supply, and rationing of intensive-care beds is common. Despite the significant impact on lives and the great expense that triage decisions for intensive care entail, few studies have been conducted. The present study, a prospective evaluation of all patients presented for admission to an intensive-care unit, was intended to determine how physicians make triage decisions and how these judgments impact on patients.

## 2. Methods

The Hadassah University Medical Center has six critical-care units (pediatric, neurosurgical, cardiothoracic, coronary, burn, and general). At the time of the study, the GICU was a "closed" unit with six beds, plus another two in a nearby recovery room. Additional overflow patients were admitted to the recovery room. The unit admitted surgical and medical patients and was managed by physicians trained in critical-care medicine. All patients triaged for admission to the ICU from May 15 until December 1, 1993, were prospectively evaluated. A triage request was defined as a physician's requesting the evaluation of a patient for ICU admission. It did not include a request for consultation or help with patient care. The following information was obtained: whether the patient was admitted or not, the patient's acute diagnosis and underlying disease, the date and time of the triage decision, the patient's age and sex, the number of patients in the ICU or already accepted to the ICU at the time of triage, the primary admission, and whether the patient was elective or emergency post-operative or not post-operative. If patients were refused admission, the reason was noted. Information was filled out by the resident or attending physician at the time of triage or admission to the ICU. Acute Physiology and Chronic Health Evaluation (APACHE) II scores were calculated 24 hours after admission to the ICU or, for those refused admission, at triage time. Higher scores indicate increasing severity of illness. Hospital and 28-day survival was determined. The Institutional Helsinki Committee granted study approval and informed consent was waived.

## 3. Results

During the 7-month study period, 448 requests for admission to the ICU were made regarding 382 patients. Of these 382, 290 were admitted and 92 (24%) were refused admission. Of the 92, 31 patients (34%) were later admitted. There were differences in the APACHE II scores and admission rates of patients with different diagnoses, $p<0.001$. The time from triage to ICU admission was 3.7±0.4 hours for patients admitted immediately, and 56.2±17.5 for those admitted later, $p<0.0001$. Patients refused admission had higher APACHE II scores (15.8±1.4 and 15.6±1.5 for those refused permanently and those later admitted, respectively) than admitted patients (12.1 ± 0.4, $p < 0.001$). The admission rate for triaged patients was lower among those with APACHE II scores greater than 21 ($p<0.001$). Fewer patients were admitted when the unit was full ([133/191 [70%]) than when it was not (157/191 [82%]) (p

< 0.01). Admission frequency decreased markedly when >8 beds were occupied at triage time, p<0.001. The majority of patients (226, or 59%) were post-operative. Eighty-nine of 100 (89%) elective surgical patients, 109 of 126 (87%) emergency surgical patients and 92 of 156 (59%) non-operative patients were admitted (p<0.001). The purpose of intensive care was active treatment in 183 (57%) cases, monitoring in 113 (35%), and weaning in 26 (8%). Multivariate analysis indicated that triage to ICU correlated positively with surgical status and diagnosis and negatively with age and a full ICU.

Patients admitted either later or never had higher hospital mortalities (11/31 [36%] and 28/61 [46%]) than admitted patients (40/290 [14%]; p<0.01, p<0.001, respectively). A significant difference in mortality between patients admitted or not to the ICU was found only in patients with APACHE II scores between 11 and 20, but a trend was noted in patients with APACHE II scores >20. Relative to the admitted group, the risk for those never admitted was 2.5 (p<0.01). No difference in mortality was noted in the admitted patients relative to the number of beds (3–12 beds) occupied at the time of triage. Multivariate analysis indicated that mortality correlated positively with APACHE II scores, non-surgical status, and diagnosis. The percentage of patients accepted to intensive care initially, later, or never varied with APACHE II scores. The admission rate for triaged patients was lower for APACHE II scores >21 (p<.001).

## 4. Discussion

This study was the first to prospectively survey all triaged patients to intensive care and determine the factors influencing decision making and their effects on mortality. It was also the first to evaluate the effect of delayed admissions to intensive care. Patients admitted later or never had higher APACHE II scores and greater risks of mortality than patients admitted immediately. More available ICU beds and more appropriate decisions may lead to more immediate admissions. Physicians' decisions to triage patients into intensive care correlated with admission diagnosis and number of beds. Hospital mortality of patients accepted to intensive care initially, later, or never varied with APACHE II scores.

Patients with certain diagnoses were always or almost always admitted. These included patients with perioperative ischemia, overdoses, liver transplantation, upper airway obstruction, and trauma and vascular surgery patients, presumably because they were at significant risk for morbidity or mortality without ICU admission. Previous studies have demonstrated higher APACHE II scores in patients admitted than in those not admitted to an ICU, presumably because beds are provided to the sickest salvageable patients. This may also be attributable to doctors' transferring patients with little hope of surviving. The majority of patients and families are willing to undergo intensive care to achieve even one month of survival. Most ICU physicians admit patients with no hope of surviving more than a few weeks. Many of these patients were not admitted to the ICU in the present study. Patients were admitted less

frequently with increasing severity of disease, and patients denied admission to intensive care had higher APACHE II scores than admitted patients. The present study found that patients with good and bad prognoses alike were denied ICU admission and that patients of intermediate illness severity as measured by APACHE II (scores of 11–20) benefited most from intensive care. Intensive care tended to improve survival in patients with severe illness and APACHE II scores >20.

Although these findings appear logical, data supporting them were previously lacking. Although it is believed that intensive care improves patient outcome, little proof is available. Prospective, randomized studies to evaluate intensive care cannot be performed because of ethical constraints. The present study evaluated 28-day mortality as a function of ICU admission. Patients admitted to intensive care had better survival rates that those who were not. Although these data cannot substitute for a randomized trial, they do provide evidence of a benefit from intensive care. In fact, the present study supports previous research that demonstrated decreased mortality in seriously ill patients treated by physicians trained in critical-care medicine. Previous studies have shown that when fewer ICU beds are available, fewer patients are admitted, and they are more severely ill. When beds were scarce, ICU resources were denied to patients who were to be monitored or were less severely ill than patients with little likelihood of survival. This study demonstrated that the number of available beds was an important determinant in triage decisions. Fewer patients were admitted when the ICU was full. Patients were almost always admitted if more than three beds were empty. Interestingly, two-thirds of triaged patients were admitted to the ICU even when it was full.

Age has been suggested as a means of limiting scarce life-sustaining resources. Most critical-care professionals believe there is no age above which patients should be excluded from intensive care. In fact, age alone has not been found to be a prognostic predictor for survival or quality of life after intensive care. In this study, triage to intensive care correlated negatively with age. Nevertheless, patients denied admission to intensive care were not older than those admitted. In summary, the present study demonstrated that physicians use several factors in triaging patients for intensive care. These include the patient’s age, diagnosis, and operative status as well as the number of beds available.

In summary, some of the most difficult ethical decisions occur in intensive-care units in Israel and around the world. We hope our work in these areas will help to improve patient care.