The current state of medical technology and critical care support is such that people who never had a chance of survival a generation ago routinely leave the hospital and return to productive lives. The unfortunate side effect of this remarkable advance is that not all patients fare so well. The patient rapidly delivered to tertiary care for resuscitation only to be found to have a lethal central nervous system disease is a common occurrence on trauma and critical care services. The concept of the non-salvageable patient and the role of futile care has become a regular part of conversations among medical staff at all levels—physician, nursing, resident, medical student, and allied health professional. Recognition of this patient is not always simple. We will argue these issues among ourselves. Who is nonsalvageable? What care is futile? How do we broach this with the families of these patients?

The evolution of solid organ transplantation needed the recognition of cerebral death criteria as a method to identify potential viable organ donors. How one determines cerebral death is unfortunately not uniform as it exists at the law—medicine interface. Criteria are agreed on, but application of the criteria is variable. Then there is the issue of how does one care for the potential donor in the workup phase of transplantation. This requires as much if not more critical care resources than the care of the original insult that culminated in cerebral death in the first place. This chapter attempts to put these issues into perspective and to offer a methodology to deal with the questions raised.

Defining the Problem

Consider two cases, which are common in the practice of emergency surgery:

1. A previously vigorous 74-year-old woman in the intensive care unit following sigmoid colectomy, end colostomy, and Hartmann’s pouch for perforated diverticulitis with peritonitis is receiving aggressive ventilator therapy for respiratory insufficiency, fluids, and low-dose vasoactive agents for distributive shock. She has mild renal insufficiency but is not requiring dialysis. She is receiving enteral nutritional support and broad-spectrum antibiotics for generalized peritonitis and returns to the operating room several times for repeated peritoneal irrigation and debridements and drainage of interloop abscesses. Gradually her sepsis resolves, the vasopressors are weaned off, her renal function improves, her respiratory function improves, and she is weaned successfully from the ventilator. She transfers to the floor and eventually goes to the acute rehabilitation unit.

2. A 68-year-old man sustains a fall from a ladder while cleaning out the gutters. He suffers a right flail chest with fractures of ribs 3 to 8, right hemopneumothorax treated by right tube thoracostomy, and a closed midshaft tibia fracture. He undergoes intramedullary nailing of the tibia fracture the day of injury and is admitted to the intensive care unit postoperatively for monitoring. He has a history significant only for mild hypertension and diabetes. Despite aggressive pain control measures, his pulmonary toilet is poor. He develops progressive respiratory dysfunction, culminating in intubation and mechanical ventilation. He develops a Gram-negative ventilator-associated pneumonia requiring broad-spectrum antibiotic therapy. Despite appropriate stress ulcer prophylaxis, he suffers a hemodynamically significant upper gastrointestinal bleed requiring endoscopic intervention. He develops acute renal failure related to his hemorrhage and requires dialysis. Over the ensuing weeks, his condition waxes and wanes with rallying periods during which he seems to clear his infections and begins to make progress in being weaned from the ventilator. Such a rally is then followed by another fever spike, leukocytosis, positive culture, drop in blood pressure, and intolerance of work of breathing and enteral feeding. Support is increased; another rally ensues, followed by deterioration.
Surgeons are trained and comfortable with the first scenario. They expect to intervene surgically in the diseases of critically ill patients and then support them as they recover. They are comfortable employing the variety of advanced technologies, therapies, medicines, and surgical techniques common in the modern intensive care unit to return their critically ill patients to their previous state of health. This is, after all, why we admit our patients to intensive care units: to employ technology in the form of monitoring devices, ventilators and respiratory care, dialysis machines, and medicines such as antibiotics, sedatives, analgesics and vasoactive agents to support their vital functions and physiology as they recover from their primary disease processes.

Surgeons are much less comfortable with the second scenario, which is all too familiar despite all of the advanced technologies and therapies available in the modern intensive care unit. Up to 40% of intensive care unit patients do not survive to leave the hospital. As the scenario implies, the physiology and vital functions of such patients can be maintained for quite some time before an irreversible terminal event occurs. Such maintenance does not come without cost. There is an obvious monetary cost to continuing to provide aggressive intensive care. The rising percentage of the Gross Domestic Product that the cost of medical care represents in our country has led to pressure from employers, the federal government, and third-party payers on doctors and hospitals to keep costs down. A significant portion of this money is spent in the last weeks of life in intensive care units.

There is also a cost in terms of resources. Hospital beds in general and intensive care beds in particular are at a premium as hospitals struggle with staffing shortages and need for efficiency. It is all too common for the emergency departments of our hospitals to be boarding a number of critically ill patients waiting for an intensive care unit bed. There are human costs to providing this support as well. The patient is frequently in pain and fearful or anxious. There is an emotional toll on families and caregivers as repeated efforts fail to restore health. Inevitably, someone begins to question whether aggressive care with curative intent should continue. This may be a family member or one of the critical care team.

The Problem with Futility

There has been a change in the last 40 years in how such issues are addressed and managed. This change parallels a shift in the ethical imperative in the doctor–patient relationship from the historical norm of benign paternalism to one of primacy of patient autonomy. Whereas there was little room for discussion in the past when the physician, the subject matter expert, recommended a course of treatment, today we place a great deal of emphasis on the need for the patient (or the patient’s surrogate) to actively participate in selecting the appropriate course of action. Thus any unilateral decision on the part of the physician to continue curative care or to withdraw life-sustaining therapies is today viewed with disdain.

Interestingly, this emphasis on patient autonomy has emerged even as physicians have become more willing to limit and/or withdraw aggressive life-sustaining therapy. In contrast to the Karen Quinlan case in which conflict between Ms. Quinlan’s physicians and family arose over the wish of the family to have potentially life-sustaining therapy (the ventilator) discontinued and the doctors’ refusal, today the conflict is more likely to be over the insistence of the family that some life-sustaining therapy be continued after the critical care team believes that there is no hope of any long-term benefit from continuation of the therapy.

This leads inevitably to a discussion of medical futility. There are legal and ethical precedents that physicians need not provide futile care. From a physician’s perspective, this concept is at first deceptively simple. The historical goal after all is to return the patient to his or her premorbid state of health, and, failing that, returning them to an acceptable state of health with minimal morbidity. Being able to function independently, or with some assistance, but, at a minimum, being able to interact with one’s environment in a meaningful manner are laudable goals, and physicians quickly point them out. Some have advocated that determination of futility is purely a function of the medical staff assessing the patient, determining that there is no realistic hope for meaningful recovery, and making the “diagnosis” of futility.

There are a number of problems with physician-defined futility. First, determining which patients cannot achieve meaningful survival is less than an exact science. Physicians are certainly subject matter experts with respect to disease, options for treatment, and prognosis, but they are not able to accurately predict who will survive and who will not. There are a number of severity of illness scores: Simplified Acute Physiology Score (SAPS), Injury Severity Score (ISS), Mortality Prediction Model (MPM), Therapeutic Intervention Scoring System (TISS), and the various versions of Acute Physiology and Chronic Health Evaluation (APACHE), among others. None has reliably been demonstrated to accurately predict mortality for individual patients. Any physician who has cared for critically ill patients for any length of time can relate stories of patients who all thought were hopeless only to see them walk back into the unit months later to thank the staff.

Second is the matter of defining meaningful survival. Differing life experiences, religious traditions, and education will lead to different definitions. For some, any life is God-given and therefore inviolable. For others, the