and analgesics administered. Removing the neuromuscular blocking agents permits patients to show discomfort, facilitating the titration of sedatives and analgesics; it also permits interactions between patients and their families. A common practice is to inject a bolus of midazolam (2–4 mg) or lorazepam (2–4 mg) before withdrawal, followed by 5–10 mg of morphine and continuous infusion of morphine (50% of the bolus dose per hour) during weaning. In patients who have significant upper airway secretions, IV scopolamine at a rate of 100 μg/h can be administered. Additional boluses of morphine or increases in the infusion rate should be administered for respiratory distress or signs of pain. Higher doses will be needed for patients already receiving sedatives and opioids. Families need to be reassured about treatments for common symptoms after withdrawal of ventilatory support, such as dyspnea and agitation, and warned about the uncertainty of length of survival after withdrawal of ventilatory support: up to 10% of patients unexpectedly survive for 1 day or more after mechanical ventilation is stopped.

FUTILE CARE

Beginning in the late 1980s, some commentators argued that physicians could terminate futile treatments demanded by the families of terminally ill patients. Although no objective definition or standard of futility exists, several categories have been proposed. Physiologic futility means that an intervention will have no physiologic effect. Some have defined qualitative futility as applying to procedures that "fail to end a patient's total dependence on intensive medical care." Quantitative futility occurs "when physicians conclude (through personal experience, experiences shared with colleagues, or consideration of reported empiric data) that in the last 100 cases, a medical treatment has been useless." The term conceals subjective value judgments about when a treatment is "not beneficial." Deciding whether a treatment that obtains an additional 6 weeks of life or a 1% survival advantage confers benefit depends on patients' preferences and goals. Furthermore, physicians' predictions of when treatments were futile deviated markedly from the quantitative definition. When residents thought CPR was quantitatively futile, more than one in five patients had a >10% chance of survival to hospital discharge. Most studies that purport to guide determinations of futility are based on insufficient data to provide statistical confidence for clinical decision making. Quantitative futility rarely applies in ICU settings. Many commentators reject using futility as a criterion for withdrawing care, preferring instead to consider futility situations as ones that represent conflict that calls for careful negotiation between families and health care providers.

In the wake of a lack of consensus over quantitative measures of futility, many hospitals adopted process-based approaches to resolve disputes over futility and enhance communication with patients and surrogates, including focusing on interests and alternatives rather than opposing positions and generating a wide range of options. Some hospitals have enacted "unilateral do not resuscitate (DNR)" policies to allow clinicians to provide a DNR order in cases in which consensus cannot be reached with families and medical opinion is that resuscitation would be futile if attempted. This type of a policy is not a replacement for careful and patient communication and negotiation but recognizes that agreement cannot always be reached. Over the last 15 years, many states, such as Texas, Virginia, Maryland, and California, have enacted so-called medical futility laws that provide physicians a "safe harbor" from liability if they refuse a patient or family's request for life-sustaining interventions. For instance, in Texas when a disagreement about terminating interventions between the medical team and the family has not been resolved by an ethics consultation, the hospital is supposed to try to facilitate transfer of the patient to an institution willing to provide treatment. If this fails after 10 days, the hospital and physician may unilaterally withdraw treatments determined to be futile. The family may appeal to a state court. Early data suggest that the law increases futility consultations for the ethics committee and that although most families concur with withdrawal, about 10–15% of families refuse to withdraw treatment. Approximately 12 cases have gone to court in Texas in the 7 years since the adoption of the law. As of 2007, there had been 974 ethics committee consultations on medical futility cases and 65 in which committees ruled against families and gave notice that treatment would be terminated. Treatment was withdrawn for 27 of those patients, and the remainder were transferred to other facilities or died while awaiting transfer.

EUTHANASIA AND PHYSICIAN-ASSISTED SUICIDE

Euthanasia and physician-assisted suicide are defined in Table 10-8. Terminating life-sustaining care and providing opioid medications to manage symptoms have long been considered ethical by the medical profession and legal by courts and should not be confused with euthanasia or physician-assisted suicide.

LEGAL ASPECTS Euthanasia is legal in the Netherlands, Belgium, and Luxembourg. It was legalized in the Northern Territory of Australia in 1995, but that legislation was repealed in 1997. Euthanasia is not legal in any state in the United States. With certain conditions, in Switzerland, a layperson can legally assist suicide. In the United States, physician-assisted suicide is legal in four states: Oregon, Vermont, and Washington State by legislation and Montana by court ruling. In jurisdictions where physician-assisted suicide is legal, physicians wishing to prescribe the necessary medication must fulfill multiple criteria and complete processes that include a waiting period. In other countries and all other states in the United States, physician-assisted suicide and euthanasia are illegal explicitly or by common law.

PRACTICES Fewer than 10–20% of terminally ill patients actually consider euthanasia and/or physician-assisted suicide for themselves. In the Netherlands and Oregon, >70% of patients using these interventions are dying of cancer; in Oregon, in 2013, just 1.2% of physician-assisted suicide cases involved patients with HIV/AIDS and 7.2% involved patients with amyotrophic lateral sclerosis. In the Netherlands, the share of deaths attributable to euthanasia or physician-assisted suicide declined from around 2.8% of all deaths in 2001 to around 1.8% in 2005. In 2013, the last year with complete data, around 71 patients in Oregon (just 0.2% of all deaths) died by physician-assisted suicide, although this may be an underestimate. In Washington State, between March 2009 (when the law allowing physician-assisted suicide went into force) and December 2009, 36 individuals died from prescribed lethal doses.

Pain is not a primary motivator for patients' requests for or interest in euthanasia and/or physician-assisted suicide. Fewer than 25% of all patients in Oregon cite inadequate pain control as the reason for desiring physician-assisted suicide. Depression, hopelessness, and, more profoundly, concerns about loss of dignity or autonomy or being a burden on family members appear to be primary factors motivating a desire for euthanasia or physician-assisted suicide. Over 75% cite loss of autonomy or dignity and inability to engage in enjoyable activities as the reason for wanting physician-assisted suicide. About 40% cite being a burden on family. A study from the Netherlands showed that depressed terminally ill cancer patients were four times more likely

TABLE 10-8 DEFINITIONS OF ASSISTED SUICIDE AND EUTHANASIA

Term	Definition	Legal Status
Voluntary active euthanasia	Intentionally administering medications or other interventions to cause the patient's death with the patient's informed consent	Netherlands, Belgium
Involuntary active euthanasia	Intentionally administering medications or other interventions to cause the patient's death when the patient was competent to consent but did not—e.g., the patient may not have been asked	Nowhere
Passive euthanasia	Withholding or withdrawing life-sustaining medical treatments from a patient to let him or her die (terminating life-sustaining treatments)	Everywhere
Physician-assisted suicide	A physician provides medications or other interventions to a patient with the understanding that the patient can use them to commit suicide	Oregon, Netherlands, Belgium, Switzerland