American Society of Anesthesiologists®

SYLLABUS on ETHICS

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Introduction

Bioethics is “the systematic study of the moral dimensions—including moral vision, decisions, conduct, and policies of the life sciences and health care, employing a variety of ethical methodologies in an interdisciplinary setting.”1 A goal of bioethics is “to improve the quality of patient care by identifying, analyzing, and attempting to resolve the ethical problems that arise in practice.”2

In clinical ethics, challenges continue to present in our everyday practice of medicine. Singer et al. identified five challenges to overcome in clinical ethics2:

1. The need for an Internet-based interactive learning module to facilitate individual learning at a distance
2. The development of continuing education modules that allow the on-site practice of learned skills, leading to improvement in professional practice and health care outcomes
3. The creation of a culture in academic institutions and clinical teaching that respects the ethical concerns of patients and the families of patients
4. An evaluation process of students and health care workers in the practice of clinical ethics, including the evaluation of their character and virtues
5. The extension of clinical ethics training to the bedside

The 2015 edition of the ASA Committee on Ethics Syllabus incorporates clinical scenarios from the previous syllabus along with revised topics reflecting on the changes in modern society and technology. Case scenarios from the original syllabus will continue to allow active learning and aid participants in the evaluation of clinical ethical situations.

Clinical ethics is a recognized topic for continuing education requirements and medical examinations as well as a training requirement for residents by the Accreditation Council for Graduate Medical Education. Continuing education evaluations and questions on medical examinations permit an evaluation process for the participant, which is a challenge for the future identified by Singer et al.2

Our hope is that clinical ethics education will lead to process improvements in patient care and create a culture upholding the respect for and ethical concerns of patients and their families as we bring ethics training to the bedside.

Barbara G. Jericho, M.D., FASA, Chair, ASA Committee on Ethics and Jeffrey S. Jacobs, M.D., Immediate Past Chair, ASA Committee on Ethics

Editors

Acknowledgments

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References


NOTE: This material has been prepared for informational purposes only. It does not constitute legal advice or medical advice and it is not a substitute for legal advice or medical advice. Accordingly, readers must not rely on any information contained herein when making legal or medical decisions and should instead consult their own legal and professional counsel for guidance.
Conscientious Objection
Kenneth R. Abbey, M.D., J.D.
Portland, Oregon


Imagine that you are assigned by your group to the ambulatory surgery center for the day. Your first patient is a 21-year-old college student for D&E to terminate a pregnancy. She is G1P0 at 8 weeks gestation. She has decided to terminate the pregnancy because she has split up with the man she was involved with (the baby’s father), and she does not feel prepared to raise the child on her own while dealing with the demands of college. Would you feel justified in refusing to perform anesthesia for this woman? Would you feel justified in refusing to perform anesthesia for this woman? What would you think if one of your colleagues refused the case? Is it ever appropriate to refuse anesthesia for a legal procedure?

Imagine now that your group has assigned you to perform anesthesia at the state penitentiary. The governor has asked your group to provide general anesthesia to a 38-year-old male who is a death-row inmate scheduled for execution by lethal injection. A recent execution by lethal injection went badly awry when the IV infiltrated, and the prisoner was believed to have suffered while a second IV was placed and the lethal cocktail given again. To ensure pain-free execution to the current prisoner, the state would like you to induce general anesthesia. When you are satisfied that the prisoner is anesthetized, you will be escorted from the room, and an executioner will administer a large dose of potassium to stop the prisoner’s heart and complete the execution. You are informed by legal counsel that your state has a statute making your participation legal and shielding you from any ethical or legal liability. Would you feel justified in refusing to perform anesthesia for this man? What would you think if one of your colleagues refused the case? Is it ever appropriate to refuse anesthesia for a legal procedure?

The issue of conscientious objection in medicine is both intellectually difficult and emotionally troubling. To some extent, objective discourse on this topic has been made more difficult because refusal of care in anesthesia is closely associated with the deeply divisive issue of abortion. However, the issue is broader than that and deserves consideration in the context of other factual scenarios. Questions worth considering include: Is it ever appropriate to refuse anesthesia for a legal procedure? If so, who decides when it is appropriate? How should a refusal be invoked?

Arguments regarding the legal and ethical appropriateness of refusals run the gamut from supporting an absolute right of refusal to concluding that no such right exists for any legal procedure. The arguments for a right of refusal essentially stem from the American tradition of freedom. After all, this country has set forth the right of freedom of expression and religion in its very First Amendment in the Bill of Rights: “Congress shall make no law respecting an establishment of religion, or prohibiting the free exercise thereof; or abridging the freedom of speech.” Certainly, it is argued, if one has a right to freedom of religion, and if their religious beliefs (or ethical principles) forbid participation in certain procedures, then no one should be able to force their participation.

The opposing view is well framed by Dr. Julian Savulescu in the *British Medical Journal* (see References). In his article, Dr. Savulescu states that “[w]hat should be provided to patients is defined by the law and consideration of the just distribution of finite medical resources” and further that “[i]f people are not prepared to offer legally permitted, efficient, and beneficial care to a patient because it conflicts with their values, they should not be doctors.” He notes that it is inefficient and inequitable for a large percentage of doctors to refuse to participate in abortions because patients are then required to “shop” for doctors who will perform a legal service. He further notes that inconsistent moral positions of physicians lead to inconsistent care and discrimination. It could be argued from Savulescu’s thesis that cases of abortion and execution are distinguishable because the abortion is beneficial to the patient whereas execution is not. However, that distinction is likely to be lost on the death-row inmate, who would probably believe it beneficial to be anesthetized by a licensed anesthesia provider before being put to death rather than be sedated by an amateur. If doctors are required to provide any legal, beneficial service requested by patients, could anesthesia providers ethically refuse to provide anesthesia to a death-row inmate who requested to be properly anesthetized prior to lethal injection? Would the same ethical considerations apply to assisted suicide in a state where it was legal?

In the United States, conscientious objection is legally permissible to some extent in most states. Legal support for refusal comes from multiple sources, is often specifically targeted at certain types of cases or objections, and, not surprisingly, is highly politicized. At the Federal level, just months after the *Roe v. Wade* decision (finding a limited constitutional right to abortion), the Church Amendment, 42 USC Section 300a-7, was passed which released individuals who refused to perform abortions or sterilizations on moral grounds from compulsion via certain federal funding. More recently, Title VII of the Civil Rights Act mandated that employers accommodate religious beliefs of employees to the extent that such accommodation does not cause undue hardship.

Among the states, 49 provide for at least a limited right of refusal on ethical grounds for health care providers. Twenty-five of those states provide a right of refusal only with respect to performing abortions. In Oregon, for example, Or. Rev. Stat. Section 435.225 provides broadly that health-care providers may decline to provide any legal service. He further notes that it is inefficient and inequitable for a large percentage of doctors to refuse to participate in abortions because patients are then required to “shop” for doctors who will perform a legal service. He further notes that inconsistent moral positions of physicians lead to inconsistent care and discrimination. It could be argued from Savulescu’s thesis that cases of abortion and execution are distinguishable because the abortion is beneficial to the patient whereas execution is not. However, that distinction is likely to be lost on the death-row inmate, who would probably believe it beneficial to be anesthetized by a licensed anesthesia provider before being put to death rather than be sedated by an amateur. If doctors are required to provide any legal, beneficial service requested by patients, could anesthesia providers ethically refuse to provide anesthesia to a death-row inmate who requested to be properly anesthetized prior to lethal injection? Would the same ethical considerations apply to assisted suicide in a state where it was legal?

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being directly involved in a legally available, medically recognized intervention, the [professional] will not be required to be directly involved in initiating such intervention.”

The American Society of Anesthesiologists (ASA) was compelled to respond to the issue of lethal injection with a “Message from the President.” The case set forth at the beginning of this chapter involving a request to provide anesthesia for lethal injection is not entirely hypothetical. In fact, in February of 2006, a federal judge in California issued an order requiring that an anesthesiologist personally supervise lethal injections. The anesthesiologist would be present to assess depth of sedation before the lethal injection was given.

The American Medical Association (AMA) and ASA reacted, with the President of the ASA stating that “[p]hysicians are healers, not executioners.” Subsequently, the ASA issued the “Message from the President” that reviews the state of affairs regarding execution and then notes that while the “ASA does not have a detailed position on anesthesiologist participation in lethal injection” it does support the AMA “position regarding physician nonparticipation in executions.” The ASA President advised the membership to “be well informed on the subject and steer clear.”

For its part, the American Board of Anesthesiology (ABA) has taken an even stronger position, as follows:

The ABA incorporates the AMA Code of Medical Ethics, Opinion E-2.06 (June 2000), regarding physician participation in capital punishment into its own professional standing policy. Specifically, it is the ABA’s position that an anesthesiologist should not participate in an execution by lethal injection and that violation of this policy is inconsistent with the Professional Standing criteria required for ABA Certification and Maintenance of Certification in Anesthesiology or any of its subspecialties. As a consequence, ABA certificates may be revoked if the ABA determines that a diplomate participates in an execution by lethal injection.

The challenge of conscientious objection does not end with an anesthesia provider’s determination to refuse participation in a given procedure. Rather, the determination to refuse imposes both obligations and liabilities on the provider. At our institution, for example, hospital policy provides that a practitioner refusing involvement in an intervention must “refer the patient to other persons who will either provide the intervention or facilitate appropriate referral” and further that “[t]his process must not create undue delay, inconvenience, or impediment to receiving requested services for the patient.” When health-care providers fail to inform patients about available interventions or refer them to providers willing to provide those interventions, they open themselves up to potential liability. Thus, for example, a religious hospital that did not inform a rape victim about the availability of emergency contraception was found liable. In another case, a fertility clinic that refused to artificially inseminate a lesbian patient was sued for discrimination. In addition to legal ramifications, refusing to provide care carries its own set of social and professional fallout. Anesthesia providers may wonder: What will my colleagues think of me? Will the patient receive the services they desire/need? Will I face disciplinary action?

Given the complexity of this issue, we recommend a pragmatic and careful approach. Here is some practical advice derived from the foregoing discussion and our experience.

Take-Home Points
1. Read your institution’s policy related to conscientious objection, if it has one.
2. Take time to investigate your state’s statutes or laws related to refusal of care.
3. Think hard about your ethical limits and try to imagine situations that might require you to make a conscientious objection.
4. If you know you possess a moral or ethical objection to certain procedures, inform your department chair or designated individual before an ethical dilemma arises. Your goal is to avoid assignment to cases that violate your principles in the first place not to react once the assignment is made.
5. If you object to a case that is thrust upon you, decline, but refer your patient to a colleague making certain that you are not, in fact or in perception, an impediment to your patient’s choice of care. If you are backed into a corner (e.g., at night on-call), delay the case until a non-objecting colleague can arrive, if possible; but if this is not possible, be prepared to choose between your principles and your obligation to your patient, and make sure you are willing to pay the price with your job or in court if your refusal results in irreversible consequences for your patient.

Learning Objectives
1. To discuss the arguments for and against a right of conscientious objection for anesthesiologists.
2. To understand the constitutional, statutory, and policy level support for conscientious objection.
3. To explain the limitations on the right of conscientious objection and the duties of providers who invoke their rights of conscientious objection.

References
4. 42 USC Section 300a-7
5. 42 USC Section 2000e[2]
The Impaired Physician: Ethical Considerations
Brian Birmingham, M.D.
Chicago, Illinois

Physician Impairment

The American Medical Association [AMA] defines impairment as "any physical, mental or behavioral disorder that interferes with the ability to engage safely in professional activities." 1

The potential causes of physician impairment are myriad and may include a variety of medical or psychiatric conditions. 2 The psychiatric condition that is of particular concern to anesthesiologists is substance abuse, especially the diversion and abuse of potent opioids and sedatives used in the practice of anesthesiology. Studies of physician health programs have noted a disproportionate representation of anesthesiologists among physicians under treatment for substance abuse. Potent opioids are the most commonly abused substance by anesthesiologists. Based on surveys of academic anesthesiology programs, the incidence of addictions to potent anesthetic drugs has been estimated to be as high as 1.6 percent among anesthesia residents and 1 percent among faculty. 3

Obtaining these controlled substances involves an unethical and criminal act of diversion. Self-administering these substances puts both the anesthesiologist and the patient at great risk. Detection of this impairment often comes after tragedy has occurred. For these reasons, the focus of this chapter will be on the ethical issues specific to the impairing condition of addiction to controlled substances.

Before embarking on further details of this particular problem, it is helpful to review the ethical fundamentals of the practice of anesthesiology. Practicing medicine is a privilege granted depending upon continued demonstration of competence and dedication. Physicians must recognize their fiduciary responsibility to patients first, then to society, to other health professionals, and to self.

The American Society of Anesthesiologists (ASA) Guidelines for the Ethical Practice of Anesthesiologists includes several tenets that are particularly relevant to the problem of addicted colleagues:

- The physician-patient relationship involves special obligations for the physician that include placing the patient’s interests foremost, faithfully caring for the patient and being truthful.
- Anesthesiologists should advise colleagues whose ability to practice medicine becomes temporarily or permanently impaired to appropriately modify or discontinue their practice. They should assist, to the extent of their own abilities, with the reeducation or rehabilitation of a colleague returning to practice.
- Anesthesiologists share with all medical staff members the responsibility to observe and report to appropriate authorities any potentially negligent practices or conditions which may present a hazard to patients or health care facility personnel.
- Anesthesiologists personally handle many controlled and potentially dangerous substances and therefore, have a special responsibility to keep these substances secure from illicit use.

Anesthesiologists should work within their health care facility to develop and maintain an adequate monitoring system for controlled substances.

“The practice of quality anesthesia care requires that anesthesiologists maintain their physical and mental health and special sensory capabilities. If in doubt about their health, then anesthesiologists should seek medical evaluation and care. During this period of evaluation and treatment, anesthesiologists should modify or cease their practice.”

These ethical guidelines are clear. The challenge lies in their application to the everyday practice of anesthesiology. Several questions arise:

- What methods of prevention are permissible and effective?
- How can early detection of diversion and addiction be accomplished while respecting the rights of physicians in training programs and practice?
- How should an addicted anesthesiologist be treated?
- Should addicted anesthesiologists in recovery be allowed to return to practice?
- What disclosure is necessary on the part of the anesthesiologist and his or her practice colleagues or employer?

Education and Prevention

Educational prevention efforts have definitely increased over the past few years. Drug awareness education is now incorporated into residency training program curriculums. The efficacy of these educational efforts is unproven. 5 Noteworthy is that a relatively high incidence of substance abuse persists despite increased educational efforts and widespread awareness.

Monitoring and Detection

Self-referral for treatment by the addict is the exception rather than the rule. Self-destructive events (e.g., suicide, accidental death, serious self-injury) are more likely to occur than self-reporting.

Random drug testing has been used in other industries but is not currently practiced by most departments of anesthesiology. Most nonmilitary residency programs do not use random urine testing. Preemployment testing and for-cause testing are more commonly used. Multiple methods of tampering with urine toxicology screening and the difficulty of detecting short-acting drugs limit its effectiveness. Detection of anesthesia drugs via routine toxicology methods can be limited by their brief half-lives and difficult-to-detect metabolites. In addition, false-positive results have been noted in random urine-testing programs. Thorough review of other confounding medications or dietary substances, a strict chain of custody for urine samples, and splitting samples for duplicate testing are all-important methods for reducing false-positive results. Also, clinicians must be protected from any professional or financial penalty until a positive test is confirmed. 6,7
Once diversion and substance abuse have been detected, the method of intervention is critical. Simple confrontation of the addicted physician is rarely effective. An orchestrated, comprehensive intervention involving a trained interventionist and a group that contains supportive colleagues, family, and friends is needed. Presentation of organized and irrefutable evidence of abuse, with insistence on direct admission to an inpatient rehabilitation facility and threat of serious repercussions for noncompliance, provides the best chance for success. The addicted physician should not be left alone. Suicide is a definite risk during the intervention process as the addicted physician becomes aware of the gravity of his or her situation.

Recovery

Whether, and under what circumstances, an anesthesiologist in recovery from a substance-abuse problem should return to clinical practice remains controversial. Surveys of program directors of training programs have pointed to rather disappointing results. Anesthesiology residents who attempted to reenter anesthesia training after treatment for substance abuse were at significant risk for relapse and even death. In 1990, Menk and colleagues reported that among anesthesia residents who developed a substance abuse problem, 14 percent died and only 34 percent returned to practice. A survey of program directors on their experiences with reentry of anesthesiology residents with a history of substance abuse from 1991 to 2001 revealed similarly poor outcomes and a 9 percent death rate. Another survey of program directors from 1997 to 2007 revealed that of the 99 residents who were allowed to return to training, 59 were ultimately successful in completing their training, 29 suffered a relapse, and 11 did not complete their training due to personal choice or were dismissed for poor clinical performance. Of the residents who relapsed, three died. Not surprisingly, program directors were split in their opinions regarding whether residents in recovery for addiction should be allowed to attempt reentry into clinical anesthesia training programs. In a study of substance-use disorder among anesthesia residents from 1975 to 2009, training records from the American Board of Anesthesiology database and disciplinary action notifications to state medical boards were examined. This method identified 384 residents with substance-abuse disorders. Of those residents whose substance abuse was detected in residency and who survived their initial episode (n = 310), 56 percent completed their residency, 44 percent achieved American Board of Anesthesiology certification, and 29 percent relapsed at least once. In 13 percent of those relapsing physicians, the first relapse manifested as death. The estimated cumulative risk of relapse over a 30-year period was 43 percent.

Fewer data are available on anesthesiologists in whom a substance-use disorder appears after training. A five-year longitudinal cohort study of physician health programs suggested that anesthesiologists in these programs had a high success rate of successful reentry in practice (76 percent) at a five-year follow-up, which was similar to that for other physicians in these programs. Note that these programs used regular periodic hair testing, witnessed naltrexone administration, and other supports to achieve this outcome.

Witnessed naltrexone administration is becoming a very important component to reentry programs. Naltrexone reduces craving in patients with alcoholism and would block any psychoactive effects of narcotic self-administration. Naltrexone can be taken orally every day, administered monthly as a depot injection, or implanted as a pellet that lasts three to four months.

Most states allow anesthesiologists with a history of substance abuse to return to practice under the supervision of a physician health program. This supervision usually requires monitoring, including drug screens; regular contact with a caseworker; worksite observation; and participation in individual and group therapy sessions.
The Americans with Disabilities Act (ADA) offers some protection to a previously addicted anesthesiologist, provided he or she is enrolled in a treatment or monitoring program. However, if the person is not enrolled in a program, no protections are provided. Also, the ADA does not protect against the legal consequences of drug diversion. Significant ambiguity still exists with regard to the specific responsibilities of employers in terms of accommodating anesthesiologists with a substance abuse disorder.

Some recommend that addicted anesthesiologists should be directed to reenter medical practice in another specialty. This opinion is based on the higher relapse rate of addicted physicians who reenter anesthesiology. Physicians who relapse are obviously a danger to themselves and to patients. The negative publicity created by high-profile cases of diversion with patient injury is a risk to the specialty of anesthesiology in the crucial arena of public opinion.17,18

Others have taken issue with the “one strike, you’re out” approach. They cite the literature that anesthesiologists who participated in a comprehensive physician health program that involved a signed contract, drug testing, and witnessed naloxone administration had an overall high success rate of reentry into practice. An individualized approach to recommending reentry would include an assessment of risk factors for relapse, which include a coexisting psychiatric illness, a family history of substance abuse, and use of a major opioid. The availability of a comprehensive physician health program, the motivation of the recovering anesthesiologist, and the support system available should also be considered. Addiction treatment is a rapidly evolving field. Investigations that assess the dynamics of characteristics of the patient, the recovery program, and the ultimate success of reentry are greatly needed but not yet available. Similarly, little to no data regarding the relapse rate of anesthesiologists who retrain in another specialty are available.

Disclosure

What are the duties to disclose when an anesthesiologist has been caught diverting controlled substances for personal use? Exact duties to report may vary from state to state, and they are based on the particulars of the circumstance of diversion. The National Practitioner Data Bank is a depository of information about physicians that ensures problems discovered in one hospital are discoverable nationwide.

Recent judicial decisions have focused on the responsibility of practices and hospitals to disclose known problems to other institutions that are requesting information for credentialing physicians. In one well-publicized case, an anesthesiology group dismissed an anesthesiologist for diverting meperidine. However, neither the anesthesiology group nor the hospital disclosed this information when references and credentialing information were requested by another hospital to which the terminated anesthesiologist had applied for privileges. The anesthesiologist subsequently committed malpractice while under the influence of narcotics that led to a patient’s devastating injury. The anesthesiology group and the hospital were found liable for damages that resulted from their failure to disclose.21

This case demonstrated that when diversion is discovered, simply terminating the addicted anesthesiologist from employment is not enough. First, an organized intervention, as described earlier, is indicated to protect the affected anesthesiologist from further self-harm. This would also afford the affected person the best chance for recovery. Second, failing a successful intervention, reporting is indicated to the state medical society and the National Practitioner Data Bank to prevent harm to patients. Finally, failure to disclose an untreated substance-abuse problem to other practices or hospitals puts patients in jeopardy and exposes the nondisclosing organization or person to liability claims.

Physicians who practice while impaired are subject to discipline and revocation of licensure by the state licensing board. Physician health programs in most states have a formal agreement with the state medical licensing board. These agreements specify the content of the monitoring program and how physician noncompliance will be addressed. Physicians who enter into and comply with an accredited physician health program as well as comply with treatment can usually avoid discipline by the state licensing board. Physicians may be referred to the physician health program by themselves, their hospitals or practices, or the state medical licensing board. Most boards require a physician to disclose if he or she is in a physician health program when reapplying for licensure.

Concern has been expressed about the disclosure required by state medical licensure applications. Ninety-six percent of state licensing boards inquire about a history of substance abuse and the physical and mental health of the physician. Of these, 69 percent of the licensing board questionnaires contained at least one question that was impermissible or likely impermissible under the ADA. The impermissible questions tended to be phrased too broadly. The physician would be required to report conditions that were too remote in time or unlikely to affect the current ability to practice. The concern is that some of these questions, such as “Have you ever suffered from or been treated for any mental illness or psychiatric problems?”, might discourage physicians from seeking mental health services because of concern of stigmatization, public disclosure, or effects on licensure.22 Also, physicians who might have sought mental health services in the past should not be subject to an undue burden when applying for licensure. Some of the licensure applications would require extensive explanation, including notarized documentation of diagnosis, treatment, and prognosis from the treating health care provider, for any affirmative answers. Furthermore, a detailed review and interview by the state licensing board can be required. Records of such inquiries of the state licensing boards may be shared with other state licensing boards and, in some states, with the public. The boards have a clear duty to ensure that physicians are fit for practice. Questions on licensing applications should focus on conditions that affect a physician’s current ability to practice.
Conclusion

Substance abuse and addiction is an endemic human problem but should also be considered as an occupational hazard to practicing anesthesiologists. An impaired anesthesiologist is also a threat to patient safety and to the reputation of the specialty. The ethical guidelines published by the ASA are clear and unambiguous about a physician’s personal responsibilities. However, to overcome this problem effectively, an organized effort by the ASA, coordinating closely with the institutions at which its members practice, is necessary.

Educational programs about substance abuse are now in place at the residency level, and awareness of the problem has been greatly enhanced. However, a high incidence of substance abuse continues despite these efforts. The problem must be approached in a broader manner. Institutions must have an organized, multidisciplinary system in place to monitor controlled substance use, detect diversion, and intervene effectively.

The anesthesiology community should adopt an attitude that prevention of physician substance abuse is a specialty-wide responsibility. This may include published objectives coming from the leadership and analogous to programs military organizations have implemented to overcome their endemic mental health challenges. These objectives would include efforts to destigmatize treatment for mental health problems and inculcate a sense of responsibility to recognize and respond to symptoms of impairment among colleagues. Resources should be committed to support research into the most effective prevention, detection, and treatment strategies. When appropriate, published recommendations could help standardize the best strategies.

Persons who are diagnosed with a substance-abuse disorder should be offered intensive rehabilitation. The decision to reenter practice should be individualized and should include a sober analysis of the real risk of relapse as well as a highly structured reentry program with behavioral and pharmacologic interventions. Serious consideration should be given to seeking a specialty without direct exposure to potent opioids, especially for those with risk factors for relapse. Further investigations are also needed to accurately quantify these risks and guide counseling.

The problem of controlled substance abuse has affected the specialty of anesthesiology from its very beginnings. To control and eventually overcome this problem, a thorough commitment from the leadership down to every individual anesthesiologist is necessary for success.

References:

Case Scenario

A resident physician in an anesthesiology training program is discovered diverting fentanyl after aberrant behavioral changes led to a for-cause urine test, which was positive. He was referred to and completed a three-month inpatient rehabilitation by the state medical society's physician health program. He now wishes to return to training in anesthesiology.

The program director has several aspects to consider.

The responsibilities of a training program to accommodate a resident with a substance-abuse problem are not clear. Note the American with Disabilities Act (ADA) offers protection from discrimination to employees with a history of addiction. The protection does not apply to those currently using illegal or impairing substances. The definition of “current user” is not precise, but most employees who are discovered using controlled substances at their workplace and subsequently entered treatment could be disciplined as “current users” by their employers. Also, the ADA permits employers to require, as a job qualification, that a person not pose a direct threat to the health and safety of others in a way that cannot be eliminated by reasonable accommodation.

The decision to allow a previously addicted resident to reenter training should be made on a case-by-case basis after consultation with the treating mental health professional. Residents with a family history of substance abuse, concomitant psychiatric illnesses, or past use of potent opioids have a higher risk of relapse.

Individual characteristics, such as the person's motivation and his or her ability to comply with monitoring and therapy sessions, should be considered. Another important aspect is the quality of resources available to enforce monitoring and support the person. The most effective monitoring programs have used witnessed naltrexone administration as part of their treatment. Depot formulations of naltrexone can last for three months. Hair-follicle testing is becoming more available, and it is probably more effective than urine testing given the short half-life of the drugs and their metabolites. Continued individual and group therapy should be offered as well. Consequences for noncompliance would need to be clearly delineated.

The resident should be clearly counseled about the very real risk of attempting to reenter the specialty. The best available data suggest that only half of residents who attempted to reenter anesthesiology training programs after an episode of substance abuse succeeded in achieving board certification. Almost one-third of these residents suffered a relapse, and more than 10 percent of those who relapsed died.

These are very sobering statistics that suggest that only those residents with the best chance for success should attempt to reenter the specialty. Prudence would impel any physician with risk factors for relapse to consider another field given the real danger to the physician and to patients. While no data are available on the incidence of relapse for physicians who retrain, the separation from an environment of easy access to potent opioids is likely a significant safety benefit.

The program will disclose to the American Board of Anesthesiology the instance of substance abuse and the subsequent need to repeat a period of training. The applicant must also answer questions about substance-use disorder when applying to take the anesthesia board examination.
**Pediatric Jehovah’s Witness**

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**Introduction**

One of the more controversial issues that can arise in an anesthesiologist’s day is the care of the Jehovah’s Witness (JW) patient. A further complicating factor in the care of Jehovah’s Witnesses can be the care of Jehovah’s Witnesses of pediatric age, whose parental beliefs systems come into play with regard to the care of the pediatric patient. This chapter will discuss a brief background of the religion of Jehovah’s Witnesses, medical issues including preoperative preparation and intraoperative management, and ethical and legal issues including special cases such as adolescents and bright line restriction, mature minors and emergent cases.

**Background**

Jehovah’s Witnesses are a Christian sect of religion founded in 1879 by Charles Taze Russell in Pittsburgh, Pennsylvania. This movement initially began as the religious publication Herald of the Morning, which then became The Watchtower, a bible study group that became known as Jehovah’s Witnesses in 1931 (Isaiah 43:10—’You are my witnesses’ this is the utterance of Jehovah). They do not believe in the Holy Trinity (Deuteronomy 6:4), the inherent immortality of the soul (Luke 23:43, Acts 24:15), hellfire (Jeremiah 7:31), or the receipt of blood transfusions (Genesis 9:4, Leviticus 17:11–14, Acts 15:20, 29).

The Watchtower Bible and Tract Society have long forbidden blood transfusions for Jehovah’s Witnesses. The issue is so serious, in fact, that Witnesses believe a blood transfusion “may result in the immediate and very temporary prolongation of life, but at the cost of eternal life for a dedicated Christian.” It is a common misconception that if you give a Jehovah’s Witness blood against his or her will, then he or she is still subject to eternal damnation. Another is that if a Jehovah’s Witness accepts blood then he or she, too, would be subject to eternal damnation with no chance of repentance. However, this does not appear to be absolute. According to an email communication with the Jehovah’s Witness lead office:

“A forced blood transfusion would not be viewed as a sin. Also, if under extreme pressure and while experiencing undue stress a Jehovah’s Witness was to compromise their belief and accept blood transfusions, in other words, if they caved in at a moment of spiritual weakness yet still held to their beliefs, that individual would not be ostracized by the Jehovah’s Witness community, rather, kindness would be shown and pastoral help offered. Nevertheless, a forced transfusion or a compromise with one’s conscience may leave the patient with deep emotional scars.

In fact, since 2000 you are not ‘disfellowshipped’ for accepting blood. You are considered to have voluntarily ‘disassociated’ yourself from the Church. This means that if you do repent you can remain in the fold and no longer be ostracized.”

However, despite this communication, Witness parents are expected not only to prevent their children from undergoing a blood transfusion, but also to prevent even pets from receiving blood. In order to prevent being administered blood transfusions while unconscious, each Witness is required to carry a card that states: “I direct that no blood transfusions be administered to me, even though others deem such necessary to preserve my life or health. I will accept non-blood expanders. This is in accord with my rights as a patient and my beliefs as one of Jehovah’s Witnesses. I hereby release the doctors and hospital of any damages attributed to my refusal. This document is valid even if I am unconscious, and it is binding upon my heirs or legal representatives.” Ideally, Jehovah’s Witnesses also will have a more complete advance directive that will list any blood fractions they will be willing to receive.

Traditionally, parental or guardian consent is required for medical procedures for all children, even those of adolescent age, except in emergency circumstances and certain circumstances (emancipated minors, mature minor). Parental rights, although not absolute, extend to the ability to raise children as they see fit and with religious freedom. Parents are required to act in a way that safeguards their children and their well-being.

The Watchtower Society initiated the ban on blood transfusion in 1945. The first court case involving JW parents refusing a blood transfusion for their child, Wallace v. Labrenz, occurred in 1951. In this case, Jehovah’s Witness parents of a child with erythroblastosis fetalis did not want a blood transfusion for their child on the grounds that—although it might save his life on earth—it would condemn his soul. The initial hearing granted custody to the court, which allowed transfusion. The case was appealed by the parents to the Illinois Supreme Court, which upheld the original decision in Prince v. Massachusetts. The courts would further clarify multiple issues over the years including rights of protection for unborn children and potential for blood. Four points needed for transfusion: 1) no alternative therapy, 2) minimal harm, 3) adults cannot choose death for their children based on religion and 4) treatment efficacy.

**MEDICAL ISSUES**

**Preoperative Evaluation**

This chapter is primarily concerned with the ethical and legal issues associated with pediatric JW patients. This chapter is not meant to be a comprehensive medical guide for management. As with every patient being prepared for surgery, the individual’s medical history must be fully investigated and a physical examination completed. For a more thorough review of types of transfusion and component acceptability, please
Intraoperative Management

Intraoperatively, maintenance of normovolemia is key for hemodynamic stability. Volume may be in the form of crystalloid such as normal saline, Plasma-Lyte, Lactated Ringer’s solution or colloid such as albumin. However, it is important to determine the parents’ beliefs regarding albumin, as there are human proteins in albumin. Yet, with some patients, albumin may be generally acceptable. Other possible methods for maintenance of volume include an inline cell saver (cell salvage), acute normovolemic hemodilution, desmopressin (DDAVP) and tranexamic acid (TXA).

With cell salvage, there are relative associated contraindications including infection, contamination and malignancy (with the use of a leukocyte depletion filter). There can also be significant risks associated with cell salvage such as electrolyte abnormalities and embolism. Additionally, certain aspects of the cell saver must be modified per some JW patients to have the blood maintained in a continuous circuit.

Acute normovolemic hemodilution may decrease the total number of red blood cells lost, decrease the viscosity of the blood which may improve vital organ perfusion and surgical field visualization, and may prevent or minimize the amount of blood transfusion required. In these cases, a specified amount of blood is removed and replaced with crystalloid in a 3:1 fashion. After the surgery, diuretics may be used and the blood may be transfused back to the patient as well. In this scenario, the blood tubing is kept in continuous contact with the patient’s tubing so as to maintain continuous circulation.

DDAVP is a synthetic vasopressin analogue that increases levels of von Willebrand Factor (vWF) and Factor VIII, which can have side effects of seizures, confusion and others.

Another possible treatment option is TXA, an antifibrinolytic that can be used therapeutically or prophylactically. However, TXA can carry risks associated with deep venous thrombosis (DVT) or pulmonary embolus (PE).

Throughout the operative period, it is beneficial to limit blood sampling to the least amount required.

Postoperative Care

In certain clinical situations, patients may benefit from more intensive monitoring and nursing care postoperatively and controlled mechanical ventilation and oxygen support to maximize myocardial supply. In the postoperative phase, some patients may also benefit from continued intravenous fluid support and hemodynamic monitoring.
ETHICAL AND LEGAL ISSUES

As described earlier in the background section and elsewhere in this syllabus regarding adult JW patients, adult patients who are of sound mind are able to determine whether they want to receive blood products based on their own religious beliefs. Those beliefs should be respected based on the ethical principles of autonomy, beneficence and nonmaleficence. However, these principles must be reexamined for pediatric patients.

To summarize the current legal arguments for the majority of pediatric patients, there are three applicable tenets:

1. The interests of the child and the state outweigh the right of the parents to refuse medical care.
2. The rights of the parents do not give them absolute right over life and death of their offspring.
3. Parents do not have the absolute right and authority over their progeny’s life based on their religious beliefs.

Specific questions and concerns to review with regard to pediatric Jehovah’s Witness patients are:

1. Will blood be needed during the surgery? Or is there a high likelihood of blood transfusion being necessary?
2. What should be done for emergent or urgent cases?
3. Is the patient and her/his parents truly practicing JW and free of coercion?
5. Impact of pregnancy and marriage on adolescence, and its impact on decision-making capacity and legal status. Overall, unless a decision is pregnancy-related, there is no precedence for mature minor status.

Will blood be needed during surgery?

One of the first and foremost aspects of preoperative preparation is to determine if blood transfusion will be needed or likely. If the answer to either of these questions is yes, it is recommended to obtain the necessary court orders for blood transfusion prior to the surgery. Even if the likelihood for complication is rare, if the surgery involves an area where bleeding could be severe, proceed with a possible court order for emergency consent. There is legal precedence for obtaining court orders for possible but likely use of blood products. It is also important to discuss with your surgical colleagues the estimated blood loss for the procedure and what likely blood products will be needed. It is also recommended that if any questions arise that you freely consult legal and risk management departments.

What should be done for emergent or urgent cases?

For all emergent cases, the life of the patient is paramount. It is within the purview of the physician and the hospital to treat any patient who arrives without identification and in distress to the utmost of their ability. This is true for both children and adult patients. Most states allow for a blood transfusion without a court order in the event of a true medical emergency where time is sufficiently limited. If a patient requires urgent care, it is recommended that the usual channels of court order be followed if acceptable given the patient’s condition.

Is the patient and her/his parents truly practicing JW and free of coercion?

With regard to this question, it is important to discuss their wishes regarding blood transfusion, especially gray areas (such as types of products and inline cell salvage) away from friends and family who may have undue influence or coercion on them. However, it is recommended that there should be a review of the risks and benefits of transfusion since materials and information are not always presented to or known to Jehovah’s Witness patients. Well-informed decision-making relies on the patient understanding accurate facts. The physician anesthesiologist should work to clarify misperceptions and inaccurate beliefs around the risks and benefits of transfusion as well. It is not the healthcare provider’s place to change the JW’s opinion, but merely to assess and document their wishes correctly. As this belief is very commonplace among JW, it is not likely to be different without company. However, it is a necessary component to ensure ethical care.

Is the patient a mature minor? Bright line distinction in adolescence and its impact on medical care.

For the majority of legal doctrine in the United States, those under the age of 18 have had little to no legal rights. However, several recent decisions have allowed minors to make their own decisions, especially with regard to sexually transmitted disease testing and even medical treatment decision-making. Thus, the creation of the idea of a mature minor, one who is able to make medical decisions without parental consent has been created, although not approved nor tested by the Supreme Court.

Several states including Pennsylvania have recognized this doctrine. To add to the confusion, In re: Rena, a 17-year-old patient suffered a laceration to the spleen. The court ordered a blood transfusion in a life-threatening event, despite the patient and family’s wishes for the minor patient to not receive blood products. The original order (to give blood PRN) was vacated as it was moot since she had left the hospital without transfusion and in good health. There are currently only five states (Pennsylvania, Tennessee, Illinois, Maine and Massachusetts) with mature minor laws on the books and two states (Arkansas and Nevada) that have enacted the doctrine into statute, so it can be very confusing. It is recommended that anesthesiologists check with the their office of legal services to better understand the applicable local statute.
In summary, in older adolescents, it is recommended that you consult the legal and risk management departments, given the possibility of a mature minor defense. Ethically, if you encounter a very mature and devout 17-year-old patient, who has considered the matter at length, this patient may be considered under the mature minor doctrine if this doctrine is applicable in your state of practice. However, this would need to be considered carefully and documented both medically and legally.

Another term that is often discussed in both legal and ethical considerations is a bright-line distinction. For many, the difference between childhood and adulthood is definitive and absolute. This absolute is what is termed a bright line, as the age of majority, defining adulthood and childhood. For others, there is more of a graded increase of responsibility and maturity, especially as Scott argues for one in her article discussing adolescence.

**Impact of pregnancy and marriage on adolescence, and its impact on decision-making capability and legal status.**

There are multiple factors that may grant emancipation to minors including military service, pregnancy, marriage, and other circumstances and conduct demonstrated by the minors and their parents. Individual states may have specific statutes and procedures governing emancipation. Pregnancy can increase patient rights in pregnancy-associated medical treatment and sexually transmitted disease testing.

**Take-home points:**

1. Many patients of the Jehovah’s Witness faith do not wish to receive blood. Those of legal majority are able to make those health care decisions for themselves and should have their autonomy respected.
2. However, JW parents are unable to deny their children the right to receive blood due to the lack of alternative therapy, minimal harm, the fact that parents are unable to choose death for their children, and treatment efficacy.
3. Court orders can be sought for both necessary as well as potential blood transfusions for pediatric patients.
4. Optimize patients preoperatively and minimize blood loss during surgery.
5. Have frank and open discussions with both the surgical team and the family regarding expectations and likely outcomes.

**References:**


**Case Scenarios**

**Case Scenario 1**

As a pediatric anesthesiologist, you are scheduled to anesthetize a 10-year-old male with severe scoliosis for a T2-L5 spinal fusion. His past medical history includes a history of mild asthma and an allergy to penicillin. His vital signs and laboratory studies are within normal limits. As you are reviewing the medical record, you note that the patient’s religion is Jehovah’s Witness. In the medical record, there is no mention of blood product usage or its implications in the medical record. You call his home number and speak with his mother to determine her thoughts on blood usage. She states that she feels very strongly that her son should not receive any blood products, as it will condemn him. You thank her for sharing her thoughts and beliefs.

- After completing the phone call with the parent, how would you reach out to the surgical team?
- What are the resources available to anesthesiologists regarding this issue?
- Who else should be contacted in addition to the surgical team?
- Should surgery be delayed, as it is an elective case? If so, for what reasons? What laboratory tests should be ordered?
- How can you design your anesthetic to decrease blood loss? What other techniques can be used?
- What are the liabilities for medical professionals involved in this case? What is considered malpractice?
Instructor’s Notes
This is a relative bread-and-butter case for the average pediatric anesthesiologist. Despite the ability for adult JW patients to refuse blood products, it is a relative commonly held mistaken belief that parents can refuse life-saving treatments including blood transfusion for their children. It is considered to be within the child’s best interest to receive a life-saving transfusion. Given the age of the child, this is not likely to be a mature minor case such as may be considered with a 17-year-old child. It is recommended to have an open conversation with the surgical team to assess the anticipated level of blood loss that might accompany this surgery, which may be high, given the large number of spinal levels associated with the spinal fusion. It is always appropriate to ensure that there is an acceptable level of skill among all health care providers as well as the availability of hospital resources and equipment.

There are multiple resources available to physician anesthesiologists. One set of resources is the legal and risk management departments in which you are recommended to initially discuss these types of cases. Also, the social work department can help you attain preoperative court orders for blood administration if thought to be necessary. The surgery should only be delayed if there are indications that the patient can be optimized prior to surgery such as a previously undetected infection or other medical condition. Recommended lab orders are complete blood count (CBC), coagulation and iron studies, and a type and cross.

There are several methods to minimize blood loss such as acute normovolemic hemodilution (ANH), administration of DDAVP, the minimizing of blood draws for laboratory testing preoperatively and intraoperatively, the administration of TXA, and the possibility of inline cell salvage if acceptable to the family. If court orders for the administration of blood products are received and the blood products are transfused as medically necessary, there is a very low possibility of medical malpractice culpability. It is imperative to be aware of your state laws and communicate with your risk management department.

Case Scenario 2
As a physician anesthesiologist in the preoperative evaluation clinic, your first patient of the morning is a 9-year-old female who presents with a newly diagnosed malignancy of the femur proven on biopsy. The patient otherwise has no medical problems or allergies. She is scheduled to have a surgical resection of the malignancy early next week that will most likely involve significant blood loss. The surgical notes in her medical record indicate a true medical need for the earliest possible resection given the high grade of her cancer. Her parents, as well as the patient, are practicing Jehovah’s Witnesses. Her parents have discussed their beliefs at length with their church and do not wish for their child to receive any blood products despite possible harm to her intra- or postoperatively.

- What are your initial thoughts with regard to counseling the parents regarding their rights and responsibilities?
- What are the rights and responsibilities of the health care providers and the hospital associated with the care of this minor child?
- What can be done to offset the risks associated with the surgical case?
- Who should be contacted in the hospital with regard to this case?
- What are the legal precedence to this case and the use of the ethics committee and judicial decree?

Instructor’s Notes:
Many hospitals have a standing judiciary relationship where blood consent court orders can be obtained very quickly. However, it behooves the prepared anesthesiologist to determine their hospital’s current policy and to obtain the order preoperatively given the high likelihood of transfusion in this surgical case. As a health care provider, it is appropriate to assess and document the beliefs of the patient and her parents. Health care providers should not sway the parents or patient to change their belief system but should ensure that the parents’ and patient’s beliefs are free from coercion of others. It is appropriate to acknowledge the parents’ and patient’s wishes and communicate that all will be done to avoid a blood transfusion; however, if medically necessary, the patient will receive one under court order.

Another aspect of the ethical dilemma behind this case is that some providers may not feel comfortable in the provision of care for the child. If a physician anesthesiologist believes that the patient’s or the parents’ beliefs places the anesthesiologist in a position conflicting with their own beliefs, the anesthesiologist should withdraw from providing care for the patient and find an acceptable alternative anesthesiologist to provide care for the patient.

Physician anesthesiologists must use available resources to offset these risk of surgery such as hormonal, antifibrinolytic and other modalities. Given the patient’s malignancy, inline cell salvage is not an option given the high risk associated with metastasis and bone and fat embolism. It is recommended to contact social work as well as the legal and risk departments to facilitate the court orders necessary for blood transfusion.
Case Scenario 3

A 15-year-old female G1P0 presents to your labor and delivery suite at 36-3/7 weeks' gestation without prenatal care. She presents to the hospital, accompanied by her mother, with painless, copious vaginal bleeding this morning. On abdominal ultrasound, it is shown that the patient has a complete placenta previa with a fetus that appears otherwise normal anatomically. The fetal heart rate is currently in the 120s–130s, and the patient's vital signs are stable as well. Both the patient and the patient's mother are Jehovah's Witnesses and do not want the patient to receive any blood transfusion. The obstetricians wish to proceed with an emergent caesarean section.

- What are your initial thoughts with regard to counseling the patient and her mother concerning her rights and responsibilities?
- What should you do, given the emergent and life-threatening nature of her disease and its possible effect on fetal and maternal morbidity and mortality?
- Does the fact of her pregnancy impact the nature of her legal status and if so, how?

Instructor's Notes:

Given that the patient in question is pregnant, there is legal precedent for obtaining a court-ordered transfusion for the unborn fetus as well as the patient since the patient is below the age of majority. It is necessary to assess and document both the patient and her mother's wishes and beliefs. As the consummate professional, you can assure that you will do your utmost to practice within their wishes, however, given the severity of her disease (complete previa presenting with severe bleeding), she will be transfused blood products if medically necessary by emergency court order. Given that there is a request for an emergency caesarean delivery, it is recommended for you to call your legal, risk management and social work departments immediately as well as your immediate supervisor who may be able to help process the paperwork portion for the judicial action as well as help with the clinical management of what can be a very difficult case with potential increased morbidity.
Fundamentals of the Pediatric Consent Process
Dominic Carollo, M.D., and David B. Waisel, M.D.
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Case Scenario
J.R. is a 15-year-old male with osteosarcoma who underwent a left leg disarticulation and three rounds of chemotherapy in the last five years. He now presents with metastatic disease in his lung. J.R. is offered video-assisted thoracoscopic surgery (VATS) to remove the metastatic cancer. J.R. does not want to proceed with the VATS at this time. J.R.’s parents, the oncologist and the surgeon believe removing the tumor will improve J.R.’s quality of life, but they are unsure if it will prolong his life. J.R. is in the preoperative holding area with a 22-gauge right-hand intravenous catheter.

- How does one determine the capacity of the patient to be able to make an informed decision?
- What is the role of the anesthesiologist in this discussion?
- Can the anesthesiologist sedate this adolescent without his permission?

Introduction
The process of informed consent in the pediatric patient differs from that in the adult patient. Competent adult patients with decision-making capacity act autonomously in the process of informed consent with their physicians. However, with most pediatric patients, physicians seek permission and obtain consent from the parents or legal guardian. Furthermore, the pediatric patient’s degree of participation in the decisions relating to his or her care depends on the pediatric patient’s age, cognitive development and interest in the decision-making process. This chapter will stress the differences in the informed consent process in the pediatric patient population from the informed consent process in the adult patient. Of note, the word “parent(s)” used in this chapter also includes legal guardians.

Implications of Pediatric Patient Age on the Informed Consent Process
The process of pediatric informed consent can be divided into three parts based on age. For children younger than 7 years of age, the anesthesiologist should obtain informed consent or permission from the parents. For children between the ages of 7–14 years of age, the anesthesiologist should obtain parental informed consent or permission and provide age-appropriate information to the child about the child’s medical care or treatment. Finally, for children older than 14 years of age, the anesthesiologist should engage children in the decision-making process as appropriate and obtain parental informed consent or permission (barring exceptions noted below) depending on the decision-making capacity of the patient, the relative risk of the decision, and the patient’s best interest, among other factors.

Assent is not required in children from 7–14 years of age but should be sought in children older than 14 years of age in the majority of cases.

Best Interest Standard for Pediatric Patients
The medical community has likened the concept of informed consent in the pediatric arena to surrogate consent. It is assumed that parents care deeply about their child. Therefore, they are given great latitude in making decisions for their child, with the exception of when the well-being of the child may be considered to be at significant risk. Ideally, the “best interest of the child” decision-making of informed consent is a shared responsibility between the parents, the physician, and pediatric patient as appropriate. Defining that which is in the best interest of the child can be challenging as a family’s circumstances at home, religious beliefs and personal beliefs may contribute to defining what is in the best interest of the child. Thus, at times, this surrogate consent may lead to conflict, particularly when the preferences of the physicians, parents and patient (in appropriate circumstances) do not align. A physician has the challenging responsibility to identify scenarios in which the parents may be making decisions that do not represent the patient’s best interest. One must carefully consider the potential psychological trauma and potential alienation of patient and family when taking the necessary legal steps to ensure adequate care for the child. It is advisable to consult with medical, ethics and legal experts in your institution in situations involving conflict.

Assent for Older Children and Adolescents
The goal of assent for older children and adolescents is to have the child participate in the decision-making involved in his or her medical care as it is appropriate for the developmental stage of the child. Factors that drive this decision to obtain assent include age or developmental stage of the patient, complexity of the decision, and the benefits and risks of seeking assent. For example, an otherwise healthy 12-year-old of appropriate development stage should be offered age-appropriate information, and his or her opinion and assent should be sought in choosing options for anesthesia, such as a brachial plexus block for an open reduction and internal fixation of the radius or an inhalational or intravenous induction of anesthesia for an elective operation. However, an option for the pediatric patient’s assent to proceed with anesthesia and surgery for an urgent liver biopsy to assess liver function for which the parents have already given permission would not be offered to this patient since offering the option to assent when the child does not have input into the decision can lose the child’s trust of family as well of the patient-physician relationship.
Assent should include the following elements as described by the American Academy of Pediatrics policy, “Informed Consent, Parental Permission, and Assent in Pediatric Practice”:

1. “Provision of information: patients should have explanations, in understandable language, of the nature of the ailment or condition; the nature of proposed diagnostic steps and/or treatment(s) and the probability of their success; the existence and nature of the risks involved; and the existence, potential benefits, and risks of recommended alternative treatments (including the choice of no treatment).

2. Assessment of the patient’s understanding of the above information.

3. Assessment, if only tacit, of the capacity of the patient or surrogate to make the necessary decision(s).

4. Assurance, insofar as is possible, that the patient has the freedom to choose among the medical alternatives without coercion or manipulation.

Older teenagers and young adults may have similar neurobiology and cognitive capacities. The legal decision-making authority of the parents and the sense that adolescents deserve to be treated as autonomous medical decision-makers has led to different standards in the minor approaching the age of majority. With minors approaching the age of majority, greater participation is sought in medical decision-making, more weight is given to preferences, and more information is provided consistent with informed consent for more complex medical decisions. The extent of room given older minors for assent depends on the maturity of the patient and the extent of possible harm occurring from the decision.

Decision-Making Capacity Evaluation

The legal and ethical factors utilized in the determination of whether a minor has decision-making capacity are the following (Table 1): age, ability, experience, education, exhibited judgment, conduct, and the appreciation of relevant risks and consequences. Determining decision-making capacity is central to the extent of authority an adolescent is granted. Decision-making capacity is the ability to understand substantially the relevant features and the long- or short-term implications of the decision. Four criteria can be used to determine decision-making capacity:

1. Ability to understand and communicate information
2. Ability to think and choose with some degree of independence
3. Ability to assess the potential for benefit, risks or harms as well as to consider consequences and multiple options
4. Achievement of a fairly stable set of values

Diekema describes three concerns related to the belief that understanding and reasoning display adolescent capacity. Diekema notes: 1) only an ability to make adult decisions is deficient as there are psychosocial factors that also interact with cognitive fundamentals; 2) the primary decision-making method includes more than the ability to use logical processing; and 3) studies including the psychosocial and emotional perspective of medical decision-making have not been conducted. The adolescent’s decision is not heavily influenced by the level of risk. Adolescents are notorious for taking enormous risks that seem inadvisable to older, more emotionally mature individuals. Hence, Diekema’s argument of the fact that adolescents can (have the ability—which is what we “test”) think rationally doesn't correlate to actually using their ability. Adolescents are too heavily influenced by emotions (outside appearance, peer pressure, etc.) to use the cold, rational ability that they possess. This leaves physicians and surrogates [such as parent(s)] to make individual determinations on a case-by-case basis.

In consideration of the above, the qualitative and quantitative extent of harm of the decision is relevant in determining the authority given the older minor. Qualitative harm can be assessed by the range of outcomes, the likelihood of long-term benefit, whether any or all of the outcomes are acceptable, the ability to rectify any harms and whether any avenues are shut off by the decisions. For example, a 17-year-old child under usual circumstances may choose to attempt nonsurgical treatment for a problem, even after the likelihood of benefits have diminished, as long as the wait does not harm the likelihood of a good surgical correction. On the other hand, for a 17-year-old child who for religious reasons wishes to refuse potentially life-sustaining blood products during the perioperative period, a more thorough discussion and evidence of mature decision-making capacity are warranted before permitting such a complex decision. Furthermore, another factor that may play into medical decision-making of older minors includes whether an operation can be postponed until the child reaches the age of majority at which point the patient can make an autonomous decision.

Sham choices and forced treatments onto pediatric patients can lead patients to distrust physicians and the medical system, leading to further lack of cooperation and potential avoidance of the medical system. Telling an adolescent he or she does not have any options is uncomfortable. A brief preemptive discussion with the parents will help determine who should lead the conversation and how information should be presented.

Exceptions for Parental Consent

In elective situations, there are two broad exceptions for the parental requirement: the emancipated and mature minor. An emancipated minor is a minor who has full and unchallenged authority to give informed consent. It is based in statute law, and the presence and specifics of the law vary by locality. Minors are often granted this status in situations such as being married, pregnant, parents in the care of their child, enlisted in the military, or by court order. In general, a mature minor, on the other hand, is a child who shows sufficient decision-making characteristic, including consideration of long-term consequences for a specific decision. Mature minor status may be granted by clinicians and hospitals seeking judicial approval. The concept
of mature minors may have a basis in statute law but the practicalities are rooted in the specifics of the case. The characteristics the court uses to define a mature minor are the same as used in ethical practice and are listed in Table 1. Table 2 lists the standards for the provision for minors’ consent in 17 states as published in a 2013 paper by Coleman and Rosoff.12

| Table 1: Factors to Consider in Determining Decision-making Capacity in Minors10 |
|-----------------|-----------------|
| Age             | Ability         |
| Experience      | Education       |
| Exhibited judgment | Conduct      |
| Appreciation of relevant risks and consequences |

Urgent situations have different criteria for exceptions to the parental consent rule. Common and statutory law generally have supported the physician for providing emergency care.10 The Emergency Medical Treatment and Active Labor Act (EMTALA) mandates a medical screening regardless of consent for patients presenting for emergency medical care.10 If a medical emergency is found during that screening, treatment can be pursued without parental consent. Best effort should be made to contact the parent(s) at this time, but treatment should not be delayed. However, all treatments in which delay would have lasting harm on the child should proceed.10

The final exceptions for assent/consent are based on medical condition. For example, if a minor seeks mental health services, pregnancy or contraceptive services, testing for HIV or any acquired immunodeficiency syndrome, sexually transmitted disease, drug or alcohol dependency requiring treatment, and crime-related injury, most states may allow a minor to consent for medical evaluation and treatment; however, it is essential to confirm specific state laws regarding these exceptions, the age at which these exceptions apply, parental notification, judicial bypass, and laws pertaining to emancipated and mature minor laws.10

An interesting dilemma can arise when the parents’ judgment is impaired by alcohol or drugs. Judgment-impaired parents are incapable of making decisions in the best interest of their child and thus are unable to provide informed consent for a child.13,14 It is recommended to avoid elective care of this pediatric patient when the patient himself or herself cannot provide informed consent. EMTALA will provide for the pursing of emergency care in this situation.14

Ideally, physicians, patient and parents are active participants in the informed consent process for adolescents and older children. Agreement among these parties not only allows the procedure to proceed but also develops trust of physicians in the pediatric patient.

Case Resolution
The key to this case is education and time. This is not a discussion for the morning of the surgery but should be completed preemptively with the family, patient, surgeon and anesthesiologist. It is in the patient’s best interest that this time is utilized to determine if the patient has a full understanding of the risks and benefits and alternatives of the procedure and to determine if the patient is reacting out of fear. This discussion time can be used to allow the patient to ask important questions to the team about the procedure and anesthesia without the pressure of the time constraints. However, because of not infrequent inadequate systems, this discussion with J.R. has to occur right before surgery in the preoperative area. One strategy to try is to get the patient dressed and moved to another room for a thoughtful discussion. The patient will feel more comfortable and will be more open to discussion. If need be, the procedure can be rescheduled for another day.

To determine capacity, one must think about these four variables:
1) Ability to understand and communicate information
2) Ability to think and choose with some degree of independence
3) Ability to assess the potential for benefit, risks or harms as well as to consider consequences and multiple options
4) Achievement of a fairly stable set of values

At this time, it is wrong to sedate this patient without having these discussions and obtaining J.R.’s assent because of the potential harm of forced care. Forced care can damage J.R.’s trust of family and of the patient-physician relationship.

Conclusion
The concept of parental consent for the child prevails. Ethical reasoning and case law support the participation of the child, under appropriate circumstances, in decision-making. Providing age and developmentally appropriate information to patients is very important. If there are disagreements among the decision-making parties, consider that the patient or parent(s) may not fully understand the implications of their decision. However, physicians should resolve disagreements with time and education, not by forcing care. In challenging situations, consider an ethics and risk management consultation. Medical ethics and law along with medical evaluation of the patient will guide the physician, patient and family education discussion regarding a pathway for medical treatment or nontreatment of a disease.
## Table 2: Provision for Minors’ Consent Authority by State*

<table>
<thead>
<tr>
<th>State</th>
<th>Provision for Minors’ Consent Authority and References</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alabama</td>
<td>By statute, Alabama provides that minors aged ≥14 have consent authority. No separate evaluation of maturity is required to trigger the exception. Al. Stat. Ann. 22-8-4</td>
</tr>
<tr>
<td>Alaska</td>
<td>By statute, Alaska provides that minors regardless of age are able lawfully to consent to medical treatment when their parent is either unavailable or unwilling to consent. Ak. Stat. Ann. 25.20.025</td>
</tr>
<tr>
<td>Arkansas</td>
<td>By statute, Arkansas provides that minors who are capable of meeting the informed consent standard have consent authority. No particular age or separate evaluation of maturity is required to trigger the exception. Ar. Stat. Ann. 20-9-602(7)</td>
</tr>
<tr>
<td>Delaware</td>
<td>By statute, Delaware provides that minors regardless of age are able lawfully to consent to medical treatment where reasonable efforts have been made first to obtain parental consent. De. Stat. Ann. 707(b)(5)</td>
</tr>
<tr>
<td>Idaho</td>
<td>By statute, Idaho provides that minors who are capable of meeting the informed consent standard have consent authority. No particular age or separate evaluation of maturity is required to trigger the exception. Id. Stat. Ann. 39-4503</td>
</tr>
<tr>
<td>Illinois</td>
<td>By judicial decision, Illinois provides that a mature minor who is capable of meeting the informed consent standard has consent authority both to accept and to refuse treatment. Case-by-case evaluations of maturity are required as a threshold matter. In re E.G., 549 N.E.2d 322 (1989)</td>
</tr>
<tr>
<td>Kansas</td>
<td>By statute, Kansas provides that minors aged ≥16 have consent authority but only in circumstances where no parent is immediately available. Kansas Statutes 38-123b. Additionally, Kansas by judicial decision provides that a mature minor who is capable of meeting the informed consent standard has consent authority. Case-by-case evaluations of maturity are required as a threshold matter. Younts v. St. Francis Hospital and School of Nursing, Inc. 469 P.2d 330 (1970). The decision in Younts has been affirmed on multiple occasions by the state’s attorney general. Opinions Nos. 2003-35; 1992-71; 1991-49</td>
</tr>
<tr>
<td>Louisiana</td>
<td>By statute and opinion of the state’s attorney general, Louisiana allows any minor to consent to any treatment she or he believes to be necessary. La. Stat. Ann. 40:1095; 76 Op. Att’y Gen. 454 (Mar. 30, 1976)</td>
</tr>
<tr>
<td>Maine</td>
<td>By judicial decision, Maine provides that a mature minor’s preaccident statements indicating a wish never to be kept in a persistent vegetative state may be determinative of the decision whether to withdraw life support. In re Chad Eric Swan, 569 A.2d 1202 (1990). A subsequent decision emphasized the “exceptional circumstances” to which this very limited exception applies. Connolly v. Board of Social Work Licensee, 791 A.2d 125 (2002)</td>
</tr>
<tr>
<td>Massachusetts</td>
<td>By judicial decision, Massachusetts provides that a mature minor who is capable of meeting the informed consent standard has consent authority, but only in circumstances where the minor’s “best interests will be served by not notifying his or her parents of intended medical treatment.” Baird v. Attorney General, 360 N.E.2d 288 (1977). Mature minors close to the age of majority who are religiously motivated may also have the right to refuse medical treatment. In re Rena, 705 N.E.2d 1155 (1999)</td>
</tr>
<tr>
<td>Montana</td>
<td>By statute, Montana provides that minors who have graduated from high school have consent authority. Mont. Stat. Ann. 41-1-402</td>
</tr>
<tr>
<td>Nevada</td>
<td>By statute, Nevada provides that minors who are capable of meeting the informed consent standard have consent authority but only in circumstances in which the health care worker believes that she or he is “in danger of suffering a serious health hazard if health care services are not provided.” Nev. Stat. Ann. 129.030</td>
</tr>
<tr>
<td>Oregon</td>
<td>By statute, Oregon provides that minors aged ≥15 have consent authority. Or. Stat. Ann. 109.640. This statute may not apply to protect the right of mature minors to refuse treatment. In re Connor, 140 P.3d 1167 (2006)</td>
</tr>
<tr>
<td>Pennsylvania</td>
<td>By statute, Pennsylvania provides that minors aged ≥18 and high school graduates have consent authority. 35 Pa. Cons. Stat. Ann. 10101</td>
</tr>
<tr>
<td>South Carolina</td>
<td>By statute, South Carolina provides that minors aged ≥16 can consent to all medical treatment except “operations.” SC Stat. Ann. 65-3-340. A different state statute provides that a licensed health worker may provide any necessary medical treatment to any child (regardless of age) without consent. SC Stat. Ann. 63-5-530. This provision, which appears to be a version of the traditional emergency exception, also distinguishes “operations.”</td>
</tr>
<tr>
<td>Tennessee</td>
<td>By judicial decision, Tennessee provides that mature minors who are capable of meeting the informed consent standard have consent authority. Applying tort law’s traditional rule of sevens, the state’s courts further presume that minors aged 7 to 13 are not mature and that minors aged 14 to 18 are. Both presumptions are rebuttable. Cardwell v. Bechtol, 724 S.W.2d 739 (1987). The decision in Cardwell was affirmed by the state’s attorney general in 2003. Tenn. Op. Att’y Gen. No. 03-087</td>
</tr>
<tr>
<td>West Virginia</td>
<td>By judicial decision, West Virginia provides that mature minors who are capable of meeting the informed consent standard have consent authority. Belcher v. Charleston Area Medical Center, 422 S.E.2d 827 (1992). Belcher cites Tennessee’s decision in Cardwell, but rejects Cardwell’s reliance on the rule of sevens.</td>
</tr>
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</table>

*Provision for Minors’ Consent Authority by State. Reproduced with permission from Pediatrics, Vol. 131, Pages 786-93, Copyright © 2013 by the AAP.
References:

Case Scenario 1
A Teenager Refuses Care
Robert D. Truong, M.D.
Boston, Massachusetts

A 16-year-old presents to the preoperative waiting area for spinal fusion surgery. She is healthy except for progressive idiopathic scoliosis. Her parents have taken her to see an orthopedic surgeon, who recommended and scheduled surgery. While awaiting surgery over the past several weeks, she has become quite anxious. Her parents have repeatedly insisted, however, that she undergo this operation in order to prevent the cosmetic and physiologic abnormalities that will develop unless progression is halted. In the preoperative waiting area, she is visibly upset. She refuses to allow insertion of an intravenous catheter and refuses to leave the waiting area and enter the operating room. When you ask her why she is refusing the surgery, she bases her decision on a fear of needles and the thought of “being cut.” At this time, you believe that the only way to induce anesthesia would be to forcibly hold her down and administer an intramuscular or intravenous sedative like ketamine.

- How should you proceed? What options do you have?
- Should she be forcibly subdued?
- Is it relevant that she is refusing surgery because she is afraid of needles and of “being cut”? What if she were refusing surgery out of a fear of death or intraoperative awareness?
- What principles influence how you should proceed?

Instructor’s Notes
This is a difficult case, and there are few right answers. The only definite recommendation is that this adolescent should not be forcibly subdued, either physically or with sedatives, at this time. The case is not urgent, and the surgery should be deferred.

This will allow time to involve other consultants (e.g., adolescent medicine specialists, psychiatrists) and to formulate a plan for the future. Hopefully, this young woman can be persuaded to undergo the procedure willingly. If her reluctance is based primarily on acute anxiety in the preoperative holding area, then she may benefit from a sedative like oral diazepam before coming to the hospital on her next visit. If the care team can be convinced that she is definitely committed to undergoing the surgery but is simply unable to control her emotions in the immediate preoperative period, then it may be possible to make a contract with her so that she understands that she will be forcibly restrained and sedated on the next occasion if she is unable to control herself. In this way, her more fundamental request (to undergo surgery) will be honored, even though her immediate request (to leave the hospital) will be overridden.

A more difficult question will arise if she persists in her refusal of surgery. This refusal is even further complicated by the “immature” reasons given for her refusal (fear of needles and of being cut). To see the matter more clearly, if she were five years younger, there would be little question about the appropriateness of proceeding against her will, whereas if she were 25 years older, overriding her refusal could be legal grounds for a charge of battery against the physicians. This is, therefore, a difficult decision that should be made only after extensive involvement from her primary and consulting physicians as well as her parents.

The ultimate question is whether the benefits of the spinal surgery are sufficiently large and sufficiently probable to offset the potentially substantial harm of forcing her into surgery against her will. As noted, everyone involved should clearly understand that the choice is not the parents’ decision. The relevant question concerns what decision is in her best interest. Although the parents can provide very helpful information toward answering this question, their views are certainly not determinative.
Professionalism in Anesthesia
Saundra E. Curry, M.D.
Chappaqua, New York

In an effort to define and reinforce professionalism in medicine, the American Board of Internal Medicine published the results of its Project Professionalism in 1995. These included six values: altruism, accountability, excellence, duty, honor, and integrity, and respect for others. Values are difficult to evaluate, so they need to be translated into observable and assessable behaviors. In 2002, the European Federation of Internal Medicine, the American College of Physicians-American Society of Internal Medicine, and the American Board of Internal Medicine collaborated to write Medical Professionalism in the New Millennium: A Physician Charter. This charter laid out three fundamental principles and 10 commitments, all of which form the basis of medical professionals’ contract with society. The American Society of Anesthesiologists (ASA), the American Board of Anesthesiology, and some 130 other societies worldwide have endorsed this charter.

How can practitioners use and apply the principles of professionalism on a daily basis? Ideally, one would start with the definition of professionalism, but, as yet, there is no definition of professionalism that everyone agrees upon in our specialty. Differing specialties view professionalism through their own eyes and emphasize different characteristics, which is appropriate because we all have different types of interactions with patients and colleagues. However, each paragraph of the charter can be applied to what we do. The principles and commitments from the charter are outlined and explained in the sections that follow.

PRINCIPLES

Principle of Primacy of Patient Welfare

As stated in the charter, “Altruism contributes to the trust that is central to the physician-patient relationship.” We care for patients at their most vulnerable moments. They are ill, frightened, and, for the most part, unconscious. We as anesthesiologists are patient advocates and protectors in the operating room (O.R.) and critical care environments. Nothing should interfere with this duty to altruism.

Principle of Patient Autonomy

According to the charter, “Physicians must be honest with their patients and empower them to make informed decisions about their treatment.” We are protectors of patient rights. We have a duty to present the options patients have for their care, and we cannot force them to have any type of anesthesia. We also present them with the risks associated with each type of anesthesia so they can make informed decisions. They rely on us to use our best judgment to provide the best of care, given the surgical situation. This also applies to do not intubate and do not resuscitate (DNR) scenarios.

Principle of Social Justice

The charter also asserts that “The medical profession must promote justice in the health care system, including the fair distribution of health care resources.” This principle might seem removed from the operating rooms and the intensive care units, but, in fact, it appears more often than one would think. We take all comers and should delegate care based only on the medical status of the patient, not his or her ability to pay, standing in the community, or any other social characteristic.

COMMITMENTS

Commitment to Professional Competence

“Physicians must be committed to lifelong learning and be responsible for maintaining the medical knowledge and clinical and team skills necessary for the provision of quality care,” says the charter. This commitment is satisfied by the institution of recertification. The recent changes to Maintenance of Certification in Anesthesia, requiring lifelong learning and maintenance of clinical skills, show the world that we acknowledge that modern medicine is an ever-changing field. Practicing with the skills learned long ago is not enough. Best practice requires keeping up to date in everything and making sure that our colleagues do, as well.

Commitment to Honesty with Patients

The charge here is that “Physicians must ensure that patients are completely and honestly informed before the patient has consented to treatment and after treatment has occurred.” Lying to patients about their care can only lead to disaster. Medical errors need to be acknowledged so we can properly care for patients. Patients suspect that many things they do not know about and might not approve of are done to them while under anesthesia. If students, vendors, and others, are going to be around, actions need to be agreed upon ahead of time, and that agreement must be followed. If a patient refuses this sort of contact, that wish must be honored. If it cannot be, the patient must be told.

Commitment to Patient Confidentiality

The charter makes the point that “Earning the trust and confidence of patients requires that appropriate confidentiality safeguards be applied to disclosure of patient information.” No one wants to hear about his or her case being the topic of elevator discussions. Electronic media make adherence to this commitment even harder. However, it is our duty to protect our patients’ medical information, which extends from the type of surgery they are having to their diagnoses and genotypes.

Commitment to Maintaining Appropriate Relations with Patients

Patient exploitation of any sort by practitioners is wrong and cannot be tolerated.
Commitment to Improving Quality of Care

Another important focus of the charter is that “Physicians must be dedicated to continuous improvement in the quality of health care.” Anesthesiologists have always been leaders in quality and safety. This extends from maintaining competence to reducing errors and collaborating with other specialties to optimize clinical outcomes.

Commitment to Improving Access to Care

“Medical professionalism demands that the objective of all health care systems be the availability of a uniform and adequate standard of care,” states the charter. We need to strive to improve access to the best possible care that our patients can receive. This includes supporting efforts to improve public health, such as the American Society of Anesthesiologists’ initiative to stop smoking.

Commitment to a Just Distribution of Finite Resources

As anesthesiologists, we can aid in this commitment by avoiding waste and applying the best cost-effective care possible.

Commitment to Scientific Knowledge

The charter also values physicians’ “duty to uphold scientific standards, promote research, and create new knowledge and technology.” This commitment might be one of the easier ones for anesthesiologists to understand. Scientific research is the way our specialty will move forward. Not everyone is cut out to be a researcher, but we can all read about and apply the advances shown to improve patient care. We can also support, with time and money, those who do research.

Commitment to Maintaining Trust by Managing Conflicts of Interest

The charter stresses that “Physicians have an obligation to recognize, disclose to the general public, and deal with conflicts of interest that arise in the course of their professional duties and activities.” Anesthesia is a specialty that draws clever people who are interested in new product and drug development and who know how to pursue these interests to potential financial markets. We need their expertise, but it must be made clear that it is the patient’s best interest that is being maintained, not just the bottom line of any new company.

Commitment to Professional Responsibility

This final commitment encompasses many duties, including promoting the specialty, maximizing excellent patient care, self-regulating, respecting one another, setting educational standards, and supporting organizations that promote the specialty on a national level. Much of how we practice can be mandated at a national level, and we need to be involved in those processes.

Adverse Consequences to Patients

What happens if we do not adhere to the principles and commitments? The consequences of not adhering to these tenets might be easier to see than their daily application.

- **Patient welfare**: This can be easily compromised if a patient’s best interest is not paramount. We could leave patients alone under anesthesia. Anesthesia is so safe these days that nothing would happen, right? The Michael Jackson debacle has put lie to that notion.

- **Patient autonomy**: As an example, the DNR debate over the past 20 years has shown that patients want their rights acknowledged and respected. Not complying with this need leads to patient mistrust and potential lawsuits.

- **Social injustice**: An example of injustice is giving good care only to those who can afford it or to those we happen to like because of their race, ethnic background, religion, or political affiliation.

- **Professional incompetence**: Allowing incompetency means that your colleague who has not read a journal or attended an educational meeting for the past 10 years might be giving you anesthesia in an emergency. Or, perhaps he or she has a substance abuse problem.

- **Dishonesty with patients**: If a mistake was made and not reported, the mistake might be repeated (e.g., drug reactions) or the patient might not get the appropriate care to rectify the new problem.

- **Lack of confidentiality**: This lack means that the world can hear about a patient’s issues. This can lead to job consequences, marital discord, and other topics that are none of anybody else’s business.

- **Inappropriate relations with patients**: This inappropriateness can lead to wrong care, bullying, and professional blackmail.

- **Not improving the quality of care**: If we do not improve the quality of the care we give, we are taking care of today’s problems with yesterday’s solutions. This might work for a while but is eventually doomed to failure.

- **Not improving access to care**: A lack of access means we end up having to care for patients who are sicker than necessary. If they do not have access to good primary care, our job is that much more difficult and dangerous.

- **Unjust distribution of finite resources**: An unjust distribution means that those who need care the most will not get it when they need it.

- **Lack of scientific discovery**: Without scientific discovery, there is no advancement of the specialty and no improvement of patient outcomes.
Adverse Consequences to Patients (continued)

- Not managing conflicts of interest: If we do not manage these conflicts, we lose the public trust. This is another form of altruism—the public needs to know that we are putting their needs above our own, not vice versa.

- Not taking professional responsibilities seriously: If we do not take our responsibilities seriously, no one else will either. If we do not care enough to support our major organizations as they fight for our rights in Congress, for example, why should Congress listen?

Personal and Daily Applications

Swick et al.4 point out that one of the flaws of the charter is that it concentrates on duties that are competency based rather than on values that are virtue based. The virtues physicians need are based in compassion and beneficence. Professionalism that is duty based is very hard to follow. Virtues have the benefit of being inherent in people and not externally driven. Therefore, they have a better chance of sticking. The other important benefit is that virtues are what people bring to any situation, regardless of the context. An O.R. is inherently stressful where different groups of people have to work together. Each group has its own agenda. If everyone concentrates on the patient as being the key element that has brought them all together, focus can be maintained on the only important person in the room.

One of the common grumbles of anesthesiologists is that they do not get enough respect from surgeons, nursing staff, or even patients. Respect is earned, not automatically granted. It is true that patients do not come to the hospital to get anesthesia. Surgeons bring them in, so there is an inherent dichotomy for everyone to manage. However, it is unlikely that patients would come for surgery if they thought they were not getting any of the services we provide, that is, analgesia, amnesia, and maintenance of life. But it is virtually impossible to change other people. One can only work on oneself. Lesser et al.5 believe professionalism is an approach to the practice of medicine that is expressed through observable behaviors, not just values and ideals. The following is an approach that encompasses some of the tenets of the charter and includes personal virtues and behaviors:

- I will place patient welfare above all else. I will have carefully planned my anesthesia for the case at hand, having discussed the surgeon’s needs with him or her ahead of time. I will discuss plans and goals with patients at a level they can understand. (altruism)

- I will listen to the patient. The patient’s concerns and desires are important in my plan for how I provide care. I will show compassion for the patient’s concerns. I do this every day, but this might be the patient’s first encounter with the O.R. (respect for others, duty, accountability)

- I will give the patient the best care, regardless of his or her place in society. (duty)

- I will strive for excellence, not just competence, in my profession. Something may be learned and improved upon every day. My board certification was just a large stepping-stone in my drive to become an outstanding and expert clinician. (excellence)

- I will be honest in my dealings with all. This includes patients, O.R. staff, surgeons, and consultants. Honesty about mistakes and errors in judgment as well as thoughts on chances of success in a particular procedure will gain me the confidence of those with whom I work. I will also honor myself—by not abusing drugs, by getting enough sleep, and so on—so that I do not compromise my ability to care for my patients. (honor and integrity)

- I will maintain the confidentiality of my patients. As a result, patients will know they can count on me. (accountability)

- I will maintain strictly appropriate behavior with my patients. (honor and integrity)

- I will take my professional responsibilities seriously. This includes supporting my national organizations that speak for me to the public. This also means treating colleagues of all specialties with the respect I expect from them. I will confer with my surgical colleagues about upcoming cases so that an appropriate care plan can be established. If I suspect that a colleague in any specialty is behaving inappropriately (e.g., drugs, alcohol, bad behavior), I will make sure it is reported to the appropriate authorities. This shows compassion for the person and care of any patients who might be in harm’s way. (respect for others, accountability)

A recent article suggests that the charter be amended. Angoff and Fortin6 state that what is missing from the original charter is a principle of generativity. They define generativity as the education and development of the next generation of practitioners by passing on the appropriate knowledge, skills, and attitudes. This can only strengthen our profession. Ultimately, by adhering to these duties, virtues, and responsibilities, we will earn the respect of all those with whom we work, take great care of our patients, and honor our specialty and ourselves.

References
Research and Publication Ethics
Stephen Jackson, M.D., and Gail Van Norman, M.D.
Monte Sereno, California, and Seattle, Washington

“Not everything that counts can be counted, and not everything that can be counted counts.”
—Albert Einstein

Case Presentation
Your residency program director informs her residents that a large number of clinical studies that had shed favorable light on several drugs and drug combinations that you and your department routinely use for postoperative pain management were fraudulently concocted. The researcher bypassed approval procedures for human studies and fabricated data in some or all of the 21 published articles, many in what are considered to be the gold standard journals of excellence in our specialty. Moreover, one of the medications supported by these fabricated studies likely interferes with bone healing after orthopedic surgery. The fallout from violations of publication ethics like these not only affects all the clinical consequences of relying on such information but also sabotages future research design and drug-comparison studies by other investigators who had relied on the veracity of the fraudulent publications. This leads you to reflect on all of the possible harm to patients you had perhaps unintentionally inflicted by using drugs or technologies based on what you now know to be fabricated and false information. In addition, you wonder what supposedly evidence-based literature you can trust and how you can ever arrive at that decision with confidence?

Ethics in Scientific Authorship
Ethical principles oblige physicians to enhance the lives of patients through the advancement of medical knowledge (beneficence) while avoiding harmful or ineffective treatments (nonmaleficence). The moral obligation to achieve integrity of medical research demands the honest behavior of the researcher (e.g., ethical design and execution of investigation, truthful and fair analysis and reporting of data) and a trustworthy scrutiny by peer reviewers, editors, and publishers. "Fraudulent research and publication practices divert the search for truth and corrupt the medical literature." The American Society of Anesthesiologists' Guidelines for the Ethical Practice of Anesthesiology, which is binding on all members, specifically forbids engagement in misconduct in research and/or publication. Scientific misconduct is internationally recognized as a serious problem. Scientific authorship is defined as having made a substantial contribution in concept, design, and acquisition of data or analysis and interpretation of data; drafting or making a critical revision of the publication; and giving final approval of the version that is published. Authors have the ethical obligations of veracity, that is, being truthful and nonmanipulative in the reporting of research results and fairly allocating credit for the collaborative efforts of colleagues. The burden of preventing author misconduct (even to the point of initiating sanctions) falls on professional peers, individual institutions, journal reviewers, and editors. Yet, the reality is that publication remains an integral element of advancement in academic medicine.

Anesthesiology assuredly has not been immune to ethical transgressions in research and publication. In addition to the American researcher to whom we referred in the introduction, even more extensive numbers (several-fold greater) of fraudulent research articles have been uncovered in Germany and Japan. Some of these authors even have been imprisoned. Editors of prominent journals appropriately retracted and expunged scores of these articles as well as called into question the research based on these fraudulent articles, but this corrective process is inevitably incomplete.

Ethical misconduct that betrays the sacred trust society has bestowed on its physicians subverts the mission of research and publication and includes (1) fabrication, (2) falsification, (3) plagiarism, (4) redundant publication, (5) ghost writing, and (6) honorary authorships.

Fabrication and Falsification of Research Results
Falsification is purposely inventing or falsifying results. Fabrication is the manipulation or omission of critical data to represent research results inaccurately. Both misconduct might lead physicians to expose patients to ineffective or harmful treatments and/or prevent them from using beneficial treatments. Furthermore, other researchers might be diverted from productive paths of inquiry as they pursue the truth based on fictional results. Studies have revealed that about 20 percent of authors know of instances involving violation of research integrity. Moreover, medical and pharmaceutical scientists are among the most frequent perpetrators of such misconduct. Historically, scholarly work had been set apart from the nonacademic practice of medicine. However, a significant portion of clinical research has now transitioned to academic-commercial or quasi-commercial hybrid environments that are susceptible to a multitude of conflicts of interest and temptations to succumb to unethical behavior.

Plagiarism and Redundant Publication
Plagiarism is the appropriation of another’s ideas, processes, results, or words without appropriate attribution. Plagiarism violates ethical principles of nonmaleficence and justice. It harms both the true author by denying credit and disrespecting his or her efforts and the readers by deceiving them and impeding their quest to determine the true route by which an idea was developed. Obviously, plagiarism gives undeserved rewards to the perpetrator, but, when detected, it raises questions about the trustworthiness of the plagiarist’s other work. A notorious but little-known example of scientific plagiarism is the surreptitious acquisition by the famed DNA helix team of James Watson and Francis Crick of unpublished data from Rosalind Franklin’s research on DNA structure and her confidential research progress report on the development of the double-helix model. Three years after...
Franklin's death, Crick acknowledged that their work had been based on her data. In truth, plagiarism is so common that many journals now deploy a system to identify it. That being said, it is challenging to identify precisely what constitutes plagiarism and whether all of its forms are equally culpable. Nonetheless, what matters most is that because science and scholarship involve new knowledge and new ideas, the use of different words to describe that work does not affect a different result.

Redundant publication is placement of a piece of research in more than one journal or the inappropriate division of a completed study into two or more parts. Redundancy deceptively adds to an already overloaded medical literature and, in so doing, can wrongly emphasize the importance of findings, inconsequential or otherwise.

**Ghost Writing and Honorary Authorships**

Ghost writing refers to an article written by a professional writer who is not given attribution while the name of a researcher or academician (usually a person with some “expertise” in the topic) is attached. Honorary authorship is adding the name of a (usually senior) academician to the authors of an article even though that person did not have a meaningful role in the scientific endeavor. Such concealment or assignment of authorship is unethical because it might be harmful by falsely elevating the perceived significance and reliability of the study, obscuring the original data, and hiding conflicts of interest.

**Ethical Obligations of Peer Reviewers and Journal Editors**

Already familiar as being essential to high-quality care and patient safety, peer review is encountered in medicine in multiple venues and as a fundamental and essential component of medical publication. Peer review satisfies the practical need to determine whether investigations and reviews are well designed and conducted; accurate in their analyses, discussions, and conclusions; ethically executed; and a credible source of new information. The process of peer review requires a fair, balanced, and unbiased application of peer expertise. Peer review allows readers to trust that articles/reviews are free of conflicts of interest and protects confidentiality of submitted data. Appropriately conducted peer review guards against fraud, theft, plagiarism, and unethical delay in publication. Peer reviewers can affect career advancement. Peer review also influences which investigations and opinions appear in the literature and thereby holds significant sway over the practice of medicine. Although it is understood that peer reviewers should possess expertise in the subject matter being reviewed, incompetent and/or unfair review is a common complaint. All this notwithstanding, we should acknowledge that peer reviewers shoulder a daunting, undervalued, and underappreciated responsibility and service to the medical profession.

Finally, we arrive at the ethical responsibilities of journal editors, who wield considerable power as they determine which research, reviews, and opinions are published—in effect, filtering, choosing, and disseminating (i.e., gatekeeping) the advances of medical science. They shoulder the responsibility and accountability for determining what criticisms may be directed at authors and how the authors can respond. They have ethical obligations to ensure that the process is transparent, published work is accurate (not fraudulent), research is ethically achieved (protection of human subjects), confidentiality of submissions is maintained, and conflicts of interest are prevented. Moreover, editors should have the diligence, commitment, and courage to ensure that allegations of research and/or authoring misconduct are addressed. Clearly, academic careers are strongly influenced by journal editors. For this remarkable service of stewardship by editors, anesthesiologists and the society we serve should be most grateful.

The U.S. Congress has established the Office of Research Integrity, and several European countries have formal medical publication review councils. A voluntary organization, the Committee on Publication Ethics (COPE), composed of publishers and editors from more than 300 journals in Europe and Asia, has established a code of conduct for journal editors. Though it reviews instances of research and publication misconduct, COPE serves only in an advisory capacity and cannot levy sanctions or punishments. One of the most critically important, yet daunting functions for journal editors is that of cleansing the literature of proven publication misconduct to mitigate the adverse ramifications of erroneous or fraudulent science on patient care and future research. COPE maintains that the purpose of such retractions is to correct the literature rather than to punish the author because honest mistakes as well as intentional misconduct can constitute the source.

Fortunately, in the three instances of massive anesthesia research fraud mentioned earlier, a bevy of respected editors from prominent anesthesiology journals collectively and successfully pursued appropriate investigation of those abuses at the host institutions and ensured that corrections appeared in the published literature. Moreover, anesthesiologists have introduced statistical methodology as a novel tool to identify unnatural patterns of categorical and continual variables in order to identify fabricated data, thereby expanding the armamentarium of editors to detect research and publication fraud far beyond acts of plagiarism.

**Quality of Care and Value in Modern Health Care**

From government payers and regulators to accrediting organizations (such as the Joint Commission), hospitals, and physicians, the quality of anesthesia care and the value of this care (quality/cost) has become an overriding preoccupation. As physicians aspire to adhere to the medical ethical principle of distributive justice for our patient population, how do we best spend our limited health care resources? Although evidence-based medicine is now the federal government’s mandate, a significant amount of the so-called evidence has, with time and cumulative scrutiny, been found to be flawed or downright fraudulent and, often, suffering from conflicts of interest.
In one such example related to skin preparations used for surgery and anesthesia procedures (e.g., regional anesthesia, central line placement), a 2010 study reported that chlorhexidine-isopropyl alcohol was more effective than the time-tested povidone-iodine solution. Based on this article, and within what would be considered a remarkably brief period of time for the field of medicine, there occurred an almost universal switch in anesthesia and surgical practices to ChloraPrep. Putting aside ChloraPrep’s added risk of contributing to operating room fires, most practitioners were startled to learn in early 2014 that the U.S. Department of Justice fined the manufacturer of ChloraPrep $40 million for violating the False Claims Act. The manufacturer’s practices involved payoffs (kickbacks) to promote the sale of its preparatory solution and encouraging uses that were not approved by the U.S. Food and Drug Administration. To make matters worse, the kickbacks were made to, among others, Charles Denham, M.D., while he served as the co-chair of the Safe Practices Committee at the National Quality Forum, a nonprofit organization intimately involved with standardized health care performance measures and practices. Denham (who, incidentally, was the keynote speaker at the 2013 American Society of Anesthesiologists Annual Meeting before his unethical actions were unveiled) was also forced to resign from the Leapfrog Group (a hospital surveying organization that claimed to champion “the gold standard for comparing hospitals’ performance on the national standards of safety, quality and efficiency”), where he had served as the chair of its Safe Practices Committee. Leapfrog then claimed that it would conduct “a thorough scientific review of its full slate of endorsed safe practices.” Moreover, the lead investigator and author of the New England Journal of Medicine article was an employee of the parent company of the manufacturer of the ChloraPrep solution. A much larger 2014 study in the state of Washington failed to find “superiority of any [of the] commonly used skin antiseptic agents in reducing the risk of surgical skin infections ... and did not support the use of more expensive [ChloraPrep] skin preparation agents.”

The Surgical Care Improvement Project (SCIP) is the source of many of the quality measurements deployed by hospitals to enhance surgical care. One of these core measures familiar to all of us (SCIP-CARD-2) involves tracking the use of beta-blocking drugs during the perioperative period (from 24 hours before surgical incision through discharge from the postanesthesia recovery room) in patients undergoing noncardiac surgery who had been on beta-blockade therapy before the surgery. The supportive evidence was in large part provided by now-disgraced Dan Poldermans, M.D., from the Netherlands, who led a series of published trials that have now been largely discredited. A 2013 meta-analysis concluded, “the key data [from Poldermans’ work] required to judge outcomes were missing and the adjudication committee was fabricated.” Moreover, the 2013 report found that beta-blockers had caused an increase in 30-day all-cause mortality, likely related to the hypotension and strokes that increased with beta-block drug use. Some have even claimed that huge numbers of deaths in Europe could be attributed to adherence to this measure.

Concluding Considerations

In light of the expanding influence of so-called evidence-based medicine, one might reflect upon credible concerns that most current published research findings are false, of poor quality, and misleading, as well as seriously flawed, exaggerated, or simply incorrect. Although institutional review committees have steadily improved in their watchdog functions, they remain largely ill equipped to detect scientific flaws or deception. Moreover, the reliability of the results of a large percentage of scientific research has been called into question because the results cannot be reproduced. Some claim that scientists are more interested in promoting their careers and less interested in promulgating the truth. The fact remains that publication in a peer-reviewed journal remains the currency of biomedical research. Will the influence of mandating that researchers adhere to ethical standards of behavior be able to return scientific research to that of a more universally moral enterprise?

Ultimately, as Henry Beecher, M.D. (the famous Harvard professor of anesthesiology and noted advocate for ethical human experimentation) stated, the integrity of medical knowledge and advancement of patient care relies on the honest pursuit of ethically designed, conducted, and reported research and, therefore, on the integrity of individual researchers.

Case Resolution

Although all of the previously mentioned fraudulent researcher’s articles have been retracted, managing derivative publications pursuant to his research is an ongoing task that might never be completed. The entirety of the effects on patient management because of influence by that fabricated data are unknown, but the fact is that there was a widespread use of medications that might have had a detrimental effect on the bone healing of hundreds of thousands—if not millions—of patients. The length of time necessary to disseminate knowledge of the fraud, and then for its corrective replacement with truthful evidence-based treatments (the undoing of potentially harmful practices), is destructive to the covenant of trust between society and its physicians. The situation is reminiscent of the now discredited, fraudulent claim published in The Lancet in 1998 that linked regressive autism to measles-mumps-rubella vaccinations. The resultant vaccine scare based on this deliberate fraud caused a staggering volume of morbidity and mortality in children worldwide whose guardians had refused the vaccine based on that falsification.

One wonders, how long after the discovery of the fabrication of the kind encountered in the introduction did it take to change practice in your institution? How can we hope to navigate through the oceans of clinical studies upon which we base our clinical care of patients? How well or successfully can we measure patient outcomes?
References

Case Scenarios
It is important for hospitals that receive payments from the federal government (i.e., almost every acute care hospital) to achieve a level of compliance with certain core measures of quality performance. Anesthesia services are not exempt, with examples such as the administration of the appropriate antibiotic in a timely manner to surgical patients and the perioperative administration of beta-adrenergic blockade drugs to patients who had been receiving them before their admission.

Case Scenario 1
You realize that due to some delays in the operating room, your patient has received an antibiotic one minute beyond the prescribed 1-hour period before skin incision. How do you ethically manage this failure to comply with this core measure? Alternatively, you discover one hour into the case that you gave only half of the appropriate dose of that antibiotic. How do you ethically manage this failure to comply?

Case Scenario 2
You are aware of your hospital’s beta-blockade drug compliance protocol. You believe your noncardiac surgical patient, who was on beta-blockade therapy before admission might be overly beta-blocked (having just read the Bouri article cited in reference 20) despite clearance from the patient’s internist and your preoperative clinic. Your trusted colleague has told you that the path of least resistance to deal with the protocol is to administer 5 mg of intravenous esmolol slowly.
Patient Protection
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Protecting Patients from Physician Incompetence

How many times has an anesthesiologist heard the question, “My surgeon is good, right?” coming from a preoperative patient? What happens if the answer is no? This section will explore the issues that surround the answer to this question.

Importance

In this era of health care reform and in the push for maximum patient safety, one of the missing puzzle pieces from the physician’s perspective is tort reform (i.e., medical malpractice reform). In fact, the American Medical Association (AMA) produced a white paper regarding the topic. One of the sticking points with tort reform is the claim by personal injury attorneys that the public needs to be protected from bad physicians. The claim is that physicians do a poor job of policing themselves. Just as important is the idea of patient protection from these subpar physicians. Indisputably, anesthesiologists have led all other medical specialties in the category of patient safety initiatives. Safety does not stop with technology, physiology, and pharmacology. Guarding the patient from professional harm is just as important.

Epidemiology

Is there a problem with self-policing in the house of medicine? In 1998, more than 4,500 medical malpractice cases were filed against physicians in Texas; 750 resulted in payments. Of the closed claims, only 121 were investigated by the State Board of Medicine. Of those cases investigated, only three resulted in discipline. Over a five-year period in Texas, 18 medical licenses were revoked, but none due to medical errors. Over a 20-year period in Minnesota, of the 35,000 physicians with five or more malpractice claims against them, only 13 percent were disciplined by the state. Over a 12-year period in Florida, of the 23 physicians with 10 or more judgments against them, only 12 were disciplined by the state. In the August 10, 2011, edition of the LA Times, the lack of physician discipline was a lead story.

According to the National Practitioner Data Bank, 5 percent of physicians account for more than half of all malpractice payouts. Furthermore, there is no mandatory interstate data sharing. In other words, one physician could commit multiple cases of malpractice in one state, move to another state, and start all over. Additionally, nearly half of physicians have witnessed a serious medical error but have not reported it. It is possible that the attorneys have a valid point.

Ethical Discussion

Considering the previous information, is there an ethical obligation to protect patients from bad physicians? According to the AMA, the answer is yes. Code E-9.031 addresses the requirement to report impaired, incompetent, or unethical colleagues. The principle of beneficence dictates that in order to do what is in the patient’s best interest, an incompetent physician should be reported. At a minimum, a patient should be protected from a physician who is working above his or her skill level. To protect society from a dangerous physician, the principle of utility is invoked. Whose happiness and safety is more important: the incompetent physician’s or society’s? The principle of nonmaleficence dictates that a physician must not do harm to a patient. Undoubtedly, there is compelling ethical evidence to support protecting patients from an incompetent physician.

One of the finest examples of protecting patients on ethical grounds came from a Manitoba Pediatric Cardiac Surgery inquest. The anesthesia group of the only hospital providing pediatric cardiac surgery in the province of Manitoba, Canada, recognized that the new (and only) heart surgeon was taking much longer on most operations than was the norm and making more intraoperative errors; as a result, his patients were suffering significant morbidity and mortality. The cardiac group went to the chief of their anesthesia group and, ultimately, to the hospital’s chief with this information and their refusal to provide services to this surgeon. A moratorium was placed on the program, and an inquest was held reviewing all of the surgeon’s cases. His care was deemed substandard, and he was mentored while his privileges were contracted. When his bad outcomes continued, he was fired. This group of anesthesiologists had nothing to financially gain from this action, and, quite possibly, stood to suffer a significant financial loss, yet they opted for patient protection.

Barriers

Despite the undeniable ethical justification for protecting patients, it is rarely done. Why does this not happen with more frequency? Some quote the Golden Rule: “Do unto others as you would have them do unto you”; many believe something bad will eventually happen to every provider, including themselves, and they would want the benefit of the doubt. Others plead ignorance, stating that they were not present or do not have all of the facts. Many claim that the outcome to the patient will not change; therefore, why go through all of those unpleasant steps for nothing? Some are afraid that they might become a target as a whistleblower, which could cause career suicide. Dr. Stephen Bolsin, a courageous anesthetist from England, spent five years battling the unsatisfactory performance of the pediatric heart surgeons at the Bristol Royal Infirmary. Despite two surgeons and the chief executive being found guilty of serious professional misconduct, Bolsin moved to Australia after being ostracized by the local medical community. Since that time, the United Kingdom passed a new law protecting whistleblowers. Though these are all theoretical reasons, safeguards are in place to protect physicians who take the high road. More importantly, legal precedents protect reporting physicians.
Legal Discussion

From the institutional point of view, it is a breach of duty for a hospital to permit a physician to remain on its staff who the hospital knows, or should know, is negligent. Additionally, a credentialing body must truthfully respond to inquiries about a practitioner. In Kadlec Medical Center v. Lakeview Anesthesia Associates, a group of anesthesiologists lost a lawsuit when they failed to fully answer a credentialing inquiry by a new hospital. The group had terminated an anesthesiologist for failing to respond to his pager and diversion of a controlled substance, but when questioned about his competence, they only responded that he was a former employee and could not supply other information due to a “large volume of requests.” This anesthesiologist’s intraoperative impairment resulted in brain damage to a patient under his care.

When protecting patients, are anesthesiologists protected from litigious surgeons? In one of the earliest legal cases addressing this topic, Locksley v. Anesthesiologists of Cedar Rapids, a group of anesthesiologists refused to continue providing anesthetics for a specific neurosurgeon. His operations included wrong-sided procedures, incidents of clipping incorrect vessels, and multiple bad outcomes. Despite peer review by two other hospitals that found the surgeon “not medically incompetent,” the group refused to work with him. The neurosurgeon sued the group for “putting him out of business,” but the Supreme Court of Iowa found in the anesthesiologists’ favor.

In a landmark case, Mansmith v. Hameeduddin, a primary care physician referred a patient with chronic back pain and a herniated disc to a spine surgeon who then operated on the wrong level. The patient returned with continued symptoms, and despite noticing the discrepancy about the magnetic resonance imaging findings and the operative report, the primary care physician did not inform the patient, instead sending the patient to a pain specialist. After a lumbar epidural steroid injection, the patient developed sepsis from an abscess and, ultimately, died. The primary care physician lost the suit for failing to notify the patient of the wrong-site surgery and failing to protect the patient from further harm.

State Boards

The purpose of state medical boards is to ensure the quality of licensed practitioners to the public. One of their rules is often the demand that physicians police themselves and their colleagues. The Florida Board of Medicine states that “failure to report to the Department of Health any person who the licensee knows is in violation of this chapter [Ground for Disciplinary Action]” can result in disciplinary action. In other words, if a licensed physician observes another licensed physician committing malpractice and fails to report that person, the observer can be punished. Although this sounds ideal, over a 14-year period, only four physicians were punished under this rule, and this infraction was always grouped with more serious charges. No physician has ever been sanctioned solely for this reason. Most states have rules similar to Florida’s, with similar results.

How to Report

Before reporting someone, it is crucial to discriminate between medical incompetence and a bad outcome. If true medical ineptitude exists, reporting should be factual, objective, and unemotional. Many options are available for reporting, and the dynamics of each practitioner’s institution should be taken into account when deciding. Possibilities include reporting to the chief of anesthesia, administration, or the credentialing department. If there is a hostile environment, anonymous reporting to the state medical board is another option. The possibility of retribution is always there, but the law usually prevails.

The goal of reporting incompetence should never involve personal retribution, business-related issues, or simply getting rid of someone. The objective should be to protect future patients from someone who is potentially dangerous. Ideally, with remediation, refresher courses, and further education, the incompetent physician can be reinstated to full practice. If not, a limitation of privileges is another viable and reasonable option. A license revocation should be the last resort.

Summary

Ethical reasons compel physicians to protect patients from medical incompetence. Additionally, case law suggests that this act is required. Furthermore, closed cases have adjudicated on the side of protecting those who protect patients. The role of the anesthesiologist is not just limited to protecting a patient during an operation or procedure but sometimes extends to guarding future patients before they even get through the door.

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NEW CHAPTER

Ethical Implications of Drug Shortages
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Abstract
Drug shortages are the new reality for those administering anesthesia, and the shortages can occur at hospitals, ambulatory surgery centers and private offices. To some extent, drug shortages are the result of technical and organizational failures, but to view them simply as technical and economic phenomena is to miss the fact that they are also ethical and political issues.1 Dealing with these shortages involves not only administrative challenges and creativity, but it creates many ethical challenges.2 This chapter reviews the causes of medication shortages, the ethical issues that arise from the shortages, and some ways the practitioner can contribute to solutions.

Introduction
Shortages of medications used in the perioperative period have become a daily challenge. In a 2011 survey conducted by the American Society of Anesthesiologists (ASA), over 95 percent of respondents in the United States experienced at least one medication shortage in the past year (Figure 1).3

Figure 1: Surveyed Anesthesiologists Affected by Drug Shortages

In Canada, drug shortages are also common in anesthetic practice as 65.7 percent of respondents described a shortage of one or more anesthesia or critical care drugs.4 This state of affairs may have a negative effect on how anesthesiologists practice anesthesia and may be associated with adverse con-sequences, such as an increase in drug errors or postponement/cancellation of scheduled procedures.4 Despite being widespread, shortages are often unpredictable, requiring providers to make rapid pharmaceutical substitutions. To view drug shortages simply as technical and economic matters is to miss the fact that they are also ethical and political issues. This presents two challenges: first, when they come about, drug shortages threaten the capacity for clinicians and governments to fulfill their moral obligations to patients and society, specifically, to provide benefit and minimize harm. Second, drug shortages stem from our societal values, especially from the choices we have made about what we want most from our pharmaceutical companies, regulators and health services.1 While inconvenient for us as physicians, it can be much worse for the patients. Complications of short-supplied drugs range from an increase in postoperative nausea and vomiting to death.

Surprisingly, the definition of drug shortages changes depending upon who is defining it. The U.S. Food and Drug Administration (FDA) states that a shortage is “a situation in which the total supply of all clinically interchangeable versions of an FDA-regulated drug is inadequate to meet the current or projected demand at the patient level.”5 Alternatively, the American Society of Health-Systems Pharmacists (ASHP) and the University of Utah Drug Information Service (UUDIS) define a shortage as “a supply issue that affects how the pharmacy prepares or dispenses a drug product or influences patient care when prescribers must use an alternate agent.”6 While subtly different, shortages may be more widespread depending on who is asked. Also crucial to this definition is legislation that allows compounding pharmacies to make medications that are on the shortage list, which could be a concern to public health due to less national oversight of these pharmacies with the potential for contamination and public health dangers.7

Drug shortages can be caused by natural disasters, a lack of available raw or bulk materials, manufacturing difficulties, regulatory issues, recalls of the affected or related products, or changes in product formulations. The ASHP and the FDA have noted an increase in drug shortages in the past decade. The drug information service at the University of Utah Health Care (UUHC), the organization that supports the ASHP drug shortage program, tracked a total of 224 drug shortages between January 1996 and June 2002.8 In 2007, UUHC identified 129 new drug shortages, with 166 additional new shortages identified in 2009.8 In 2010, the number of drug shortages reached 211, the highest number recorded to date in a single year.8 Another frustrating fact is that the FDA has limited authority in the specific matter of drug shortages. When a shortage occurs, the agency cannot require a company to manufacture a particular drug, produce more of a drug they already manufacture, or direct to whom it can be sold or how it can be distributed. Manufacturing difficulties, planned production-volume changes, and even most product discontinuations are not required to be reported to the FDA.9
Case Scenario
The director of the pharmacy has informed you that neostigmine will be in short supply for the coming months. Some questions that arise include:
1. If this medication becomes unavailable to the hospital, do we need to inform patients of the increased risk of prolonged ventilation?
2. Can we split the remaining 10 cc bottles into two or three doses to be used on different patients to make the supply last longer?
3. Should we order neostigmine from some of the other suppliers that are outside of the usual chain?
4. If we can get one last shipment, should we try to order it all (clean out the supplier’s remaining inventory)?
5. Is there something that should be done on a larger scale, besides working with the hospital pharmacy?

Manufacturing and Supplying Medications
To understand the causes of drug shortages, it’s beneficial to understand the creation of a medication, from manufacturing and distribution (Figure 2).
A pharmaceutical company first acquires raw materials then combines them to create the finished medication. Problems with the acquisition of raw materials, such as civil unrest or a labor strike, could be the initial cause. Despite the fact that 80 percent of the active ingredients used in pharmaceuticals come from outside of the United States, these disruptions accounted for less than 10 percent of shortages from 2010–11.10 Transportation of these materials to the factory could result in delays. Once all necessary materials are present, reliable equipment is crucial. Machinery malfunction, loss of sterility, contamination with particulate matter, and other problems can arise (Figure 3).

Figure 2: Pharmaceutical Supply Chain

Figure 3: Causes of Drug Shortages
Once packaged, the medication is then transported to regional distribution centers. It’s possible that because of inadequate planning or a sudden change in demand, one regional center may be without the medication while others have ample stock. These regional variances in supply could still result in national shortages. For example, when an anticipated shortage is announced, 85 percent of hospital purchasing agents buy excess inventory, which could increase the duration of a shortage. From these regional distribution centers, the medications find their way into health care pharmacies for dispensation.

The information is also important from the procurement side. A health care facility’s pharmacy staff doesn’t call multiple factories to obtain pricing and place orders for the thousands of products needed. Rather, group purchasing organizations (GPO) have developed to handle this complex task. These GPOs then negotiate prices and place orders with factories on behalf of their customers. As customers, health systems want to pay the lowest possible price for their products. While this sounds intuitive (nobody goes shopping and offers to pay higher prices), it has led to unintended consequences. Because there are few GPOs that handle the vast majority of health care systems, they have tremendous negotiating power with the manufacturers. In fact, GPOs have so much power that the profit margins of most medications in short supply are minimal. This has several effects: (1) with such small profit margins, there’s no interest for competing manufacturers to enter the market; (2) with GPOs controlling such large swaths of the market, it would be equally challenging and risky for a new manufacturer to enter the market without guaranteed contracts; (3) when machinery breaks for one of the low-profit generics, there is less incentive to repair the machinery; (4) because drug manufacturers make multiple products, if machinery breaks down for one of the more profitable medications, a manufacturer will often divert a generic line’s equipment, when possible, to reap greater rewards; (5) there is minimal incentive to upgrade and modernize generic line equipment.

The other challenge is the practice of just-in-time inventory. Because the health care pharmacy and the regional distributors don’t want excess inventory (lack of space and too much capital tied up), factories have followed suit. Therefore, medications are made and shipped rapidly. Thus, when a product manufacturing line goes down for whatever reason, existing stocks of medications are used up at their normal rate, but there’s no forthcoming replacement.

All the above issues lead to the major cause of drug shortages: lack of redundancy in the supply chain. In fact, three manufacturers account for 70 percent of the sterile injectable market in the United States, and in some cases, one company is responsible for 90 percent or more of a drug. For these critical medications, that’s just not safe.

**Ethical Discussion – Generalities**

When evaluating the ethical implications of a situation or intervention, it’s helpful to partition the discussion into the main silos of bioethics: autonomy, beneficence, nonmaleficence and distributive justice.

Autonomy, as it relates to drug shortages, arises with the situation of informed consent of the patient when using substitute medications. While the specific discussion of informed consent will be covered below, when it comes to scheduling surgical procedures or operations, patients are forced to change their routines. Patients need to be granted a leave from their job, they need to arrange for child care, and they may need relatives or friends available to help them after the surgical procedure. In many instances, this involves travel for both the patient and those friends and relatives. Therefore, the threshold for a patient to postpone a surgical procedure is often much greater than it might be when simply weighing the science involved in the decision. As long as the patient understands the potential for increased adverse effects or prolonged recovery, the patient can choose a path that may seem unpleasant or unrealistic to the caregiver. This is why a complete discussion with the patient is ideal rather than making unilateral decisions.

Beneficence is the principle that the provider wants to do the best thing for the patient. The best thing from the provider’s perspective may not be the best thing from the patient’s perspective when other factors are taken into account, as escribed above. For example, in appropriate patients, succinylcholine is the best muscle relaxant to perform a rapid sequence induction. Should the absence of this medication force the institution to close the emergency room and transfer all emergency operations to another facility? In this sense, beneficence needs to be balanced. Beneficence from a single perspective may not be beneficent at all.

Nonmaleficence is the theory of non-harm, and this is the topic where different providers of care may have different perspectives as to what is fair, safe and appropriate. What one caregiver considers dangerous another may deem reasonable. This notion of not proceeding without the full armamentarium of medications needs to be balanced with the potential psychological or physiologic damage to the patient kept waiting for surgery. For example, if a patient scheduled to resect contained colon cancer is postponed until “better” medications become available to the facility, the risk is taken that the cancer will progress to a worse stage. Care must be taken to evaluate the entire scenario and all competing factors.

Distributive justice plays a role relating to rationing or hoarding. Drug shortages necessarily mean that someone will be without medications, and great care must be ensured to minimize that this allocation is done as fair as possible, reducing inequalities.
Ethical Challenges – Specifics

One of the key issues with drug shortages is to define exactly how front-line physicians are affected (Figure 4), and at least one professional society has addressed this topic.15

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Anesthesiologists are often faced with the challenge to use medications that are less familiar, have more adverse effects, may be less effective and, in some circumstances, may result in less than optimal patient outcomes. One example is a case in which propofol was unavailable so the hospital ordered multidose vials of methohexital. The operating room pharmacist dispensed an inappropriate dose to the anesthesiology department, and the anesthesiologist incorrectly diluted the medication giving the patient an eight-fold overdose leading to cardiac arrest and death.15 Additionally, these adaptations need to be done minimizing the production pressures involved with operating room efficiency. Imagine if a vascular surgeon needed to perform a distal bypass, and successfully do so without bulldogs, without three of the most commonly used sutures, without the correct blades, and still complete the operation in the usual amount of time. That surgeon wouldn’t remain silent about the deficiencies and would complain all the way up to the executive suite.

Because of the direct effect on the practice of anesthesia, anesthesiologists have an ethical and professional responsibility to participate in the development of solutions to this societal problem.

Another common dilemma is deciding when and if to postpone or cancel a case due to the lack of a medication. With the exception of oxygen, it’s unclear which medications are “must-haves.” During the spring of 2017, hospitals around the United States struggled with a declining supply of the vital drug sodium bicarbonate. Without a sufficient supply of sodium bicarbonate, some hospitals considered postponing elective procedures or making difficult decisions about the allocation of the drug to patients. Supplies ran so low at a hospital in Mobile, Alabama, that the head pharmacist called a meeting with the doctors and administrators. Ultimately, they concluded to postpone the seven open-heart operations scheduled for the following week and to send one critically ill patient to a hospital across town because his surgery could not be delayed.16

It’s up to each individual provider, working with the surgeon and accounting for the patient’s planned procedure and health status, to decide what’s safe. Anesthesiologists and surgeons should consider postponing an elective procedure when the risks of proceeding outweigh the risks of using alternative medications to those that are unavailable.

Part of a physician’s duty is to protect patients by using sound medical judgment to decide care. There are reasonable substitutes for some medications, but others do not have a suitable alternative. Take, for example, a retrospective cohort study of 26 United States hospitals in the Premier Healthcare Database with a baseline rate of norepinephrine use of at least 60 percent for patients with septic shock.17 This particular study looked at adults with septic shock admitted to study hospitals between July 1, 2008, and June 30, 2013 (n = 27,835). This paper concluded that compared with hospital admission for septic shock during quarters of normal use, hospital admission during quarters of shortage was associated with an increased rate of in-hospital mortality (9,283 of 25,874 patients [35.9 percent] versus 777 of 1,961 patients [39.6 percent]), respectively; absolute risk increase = 3.7 percent [95 percent CI, 1.5 percent-6.0 percent]; adjusted odds ratio = 1.15 [95 percent CI, 1.01-1.30]; P = .03).17 This data demonstrates that among patients with septic shock in United States hospitals affected by the 2011 norepinephrine shortage, the most commonly administered alternative vasopressor was phenylephrine. However, the patients admitted to these hospitals during times of shortage had higher in-hospital mortality.17

Another important ethical issue is patient disclosure. In a 2015 study published in Anesthesia & Analgesia, 949 Mayo Clinic patients were invited to participate in a postal survey that posed a hypothetical surgical scenario and requested answers regarding the desire to be informed and to postpone scheduled surgery because of a neostigmine shortage.18 The majority (>50 percent) of surveyed patients wanted to be informed of drug shortages that might affect their care.18 Some shortages may have a profound impact on the patient’s experience. For example, the use of certain intravenous induction agents is associated with an increased risk of postoperative nausea and vomiting. Alternatively, some medications may be seamless substitutes for the usual drug. A specific example of a negative experience may include caring for a 30-year-old woman with a history of postoperative nausea and vomiting without any serotonin antagonists available. This can be compared with the situation when caring for a patient and metoprolol is available but labetalol is not. These are inequivalent situations for the patient. In general, if the anesthesiologist judges the risk of increased morbidity or mortality by using alternative medications to be negligible, then there is no need to discuss this issue when obtaining informed consent. However, if the anesthesiologist judges the added risk to be significant, then the discussion of alternative plans should be part of the informed consent process.

If a patient suffers a non-ideal outcome due to a drug shortage, there is a responsibility to report the event. When negative outcomes go unreported, there is a misperception
that the shortages have no impact on patient safety. These outcomes can and should be reported to the Anesthesia Quality Institute (AQI), which is a Federally Designated Patient Safety Organization. This means anything reported to them is anonymous, confidential and not discoverable based on Federal law (https://www.aqihq.org/airs/airsIntro.aspx). Another place to report non-ideal outcomes due to a drug shortage is the FDA via drugshortages@fda.hhs.gov. Finally, the patient has a right to know about adverse events to mitigate further suffering whenever possible.

Waste at the provider level plays an important role with drug shortages. Every physician should evaluate his or her normal pattern for medication usage. In the face of shortages, it is reasonable to question whether emergency drugs need to be drawn into syringes (as opposed to simply having them available). It may be reasonable to use smaller vials of medications, when available, to minimize wastage. It is never reasonable, however, to create your own rules when it comes to dividing ampules or bottles of medications in order to share the drugs among multiple patients. There are strict guidelines for how this should be accomplished, and if the rules do not make sense, anesthesiologists should advocate for amending them. Of note, ASA supports the Centers for Disease Control and Prevention’s (CDC) position on single-dose vials and has adopted their position for safe injection practices. On-site pharmacies should be involved in the discussion and solution to maximize the medications that are in short supply. Pharmacists have the ability to safely divide single-dose vials for multiple patient use in accordance with the United States Pharmacopeia General Chapter 797 Guidelines, and this can easily double the number of uses. Planning and creative thinking can prolong an institution’s limited supply. In summary, in the face of specific drug shortages, anesthesiologists should reassess customary practice patterns of drug preparation and usage to minimize drug wastage and safely maximize any limited supply. Physicians should also utilize available hospital resources including other health care professionals to help navigate specific shortages.

Finally, it is ironic that physicians may have indirectly and inadvertently contributed to the current situation. For example, suppose drug A is the preferred medication to treat a specific problem, but drug A is no longer available. The substitution of drug B or C may be seamless allowing for continued patient care. The problem with this situation is twofold: (1) the loss of drug A may go unreported, (2) eventually alternate drugs B and C may also become short-supplied leading to no alternatives. Therefore, by being adaptable, further problems may occur and when they do it could be far worse. Therefore, flexibility and adaptability in patient care may obscure the reality of potential harm created by drug shortages and should not be a substitute for pursuing a permanent solution. Using alternative medications for those in short supply is a function of excellent skill, judgment and training, but should complement, as opposed to substitute for, reporting shortages and seeking solutions.

Other Solutions

In addition to front-line physicians, there are others within health care who are also concerned with solving medication shortages. Specifically, medical and medically-related societies have been leaders in identifying and ameliorating these issues. Of note, the American Society of Anesthesiologists, the American Society of Health-System Pharmacists and the American Society of Clinical Oncologists have all played leadership roles in uniting the key stakeholders, asking questions and providing solutions. Some of the ideas identified by the groups have made their way into practice. One example is the Food and Drug Administration (FDA) now has a department dedicated to medication shortages with the goal of early identification, manufacturing remediation and rapid approval of overseas supplies when appropriate. To help curb the problem, President Obama issued an executive order in October 2011 requesting that drug manufacturers alert the FDA to potential drug shortages, and a law requiring such advanced notice was passed in July 2012. These moves have helped the FDA avert many new drug shortages, allowing the number of new shortages of drugs to decrease from 267 in 2011 to 204 in 2012, according to the Drug Information Service. This gives the FDA time to identify other potential sources and maintain supply. The FDA has been proactive in the past few years since requiring early notification by manufacturers of impending disruptions. In the shortages studied, the Agency’s three most common actions were:

1. Asking other firms to increase production (31 percent).
2. Working with manufacturers to identify means to mitigate the dangers of products with quality issues (28 percent; e.g., work with a firm to include a filter with a product containing particulates).
3. Expediting review of regulatory submissions (26 percent). They have (1) contacted other manufacturers to assess willingness and ability to pick up the slack, (2) expedited inspections of review of submissions, (3) exercised temporary enforcement discretion for new sources, (4) worked with manufacturers to find root causes, and (5) review risk mitigation strategies for remaining inventory.

These actions have helped prevent new drug shortages at a rate of over 200 per year in 2011 and 2012 (FDA Strategic Plan: 2013). The FDA has even created a drug shortage app for smartphones.

A topic that commonly arises when speaking of drug shortages is hoarding. Is it appropriate to order extra medications that are in short supply so a given facility has enough for the foreseeable future? While having plenty of medication X is important for one institution, if that drug is in short supply, then it follows that other facilities will have less, which could potentially inconvenience or harm their patients. Unfortunately, there is no clear boundary between preparedness and hoarding. As a generalization, if one facility has a significant amount of extra medication stored away while a nearby facility has none,
it’s very likely unethical. Some might call it good business, but because this particular business involves people’s health, it crosses a line. Confounding this statement, however, is that those two example facilities may use different GPOs for their supplies, which may result in differing availabilities. Therefore, while stockpiling medications may be beneficial for a given institution, excessive accumulation and storage of drugs can result in shortages to other institutions and may be unethical. If one facility is purchasing and storing short-supplied medications with the intent to resell at a profit, it is clearly unethical. Unfortunately, an online 2011 survey found that 56 percent of hospital purchasing agents had received “daily” solicitations from resellers of medications that were not part of the normal supply chain. This is often referred to as the gray market. In addition to the unethical nature of scalping or price gauging medications, there is the inability to ensure that proper handling of the drugs was maintained (pedigree). Additionally, the gray market can worsen the impact of drug shortages. There is one recommendation to have a six-month supply on hand of the medications deemed critical, and for the office setting this may be practical, but if all offices planned like this, it would likely precipitate a widespread crisis of many medications.

A final ethical topic is rationing. While rationing often arises when discussing limited resources, this has been more commonly described with ventilator use during mass casualties and organ transplantation. However, rationing has already been occurring with oncology medications and flu vaccinations. Whether perioperative medication rationing will ultimately fall to the department level remains to be seen, however in the off-chance that it does, it will be crucial to identify a policy that encompasses fairness (similar patients will be treated the same, regardless of special status), transparency, enforcement, relevancy, and provide for an appeals process.

Drug shortages are a major threat to the delivery of beneficent, nonmaleficient and equitable health care. Regrettably, there is no quick fix or simple remedy for the problem with medication shortages due to the complex nature of the cause. Stepping back into basic economics, there has to be a motive for businesses to make a product, and that motive is typically profit. Because profit margins are so slim, there is minimal interest to entering the market. Therefore, solutions should probably be directed toward this imbalance. One idea posed by the FDA is the recognition that there is no incentive for quality production. If there were economic incentives for quality, it may encourage manufacturers to provide better maintenance and controls at the production level. Publicizing manufacturing quality data may also provide nonfinancial incentives for factories. This may entail multiple fixes such as examining the relationship between GPOs, health care facilities and manufacturers; delving into the manufacturing plants themselves; and perhaps broaching the idea that subsidies should be made to support the minimally profitable generics. These repairs are financial in nature and assume that there will continue to be a steady supply of raw materials, which is not always the case.

Patient care can be impacted by drug shortages. Targeted solutions have been difficult because many of the root causes for shortages were unknown. Increased communication alone is not the solution. The key area of focus must be addressing the ongoing manufacturing problems at the United States facilities that produce many of the sterile injectable drugs for the country. Drug shortages happen, in part, from choices that society has made about how to organize our markets, our regulatory systems and our health services. If we want to prevent drug shortages, we need to keep in mind that any proposed solution will likely threaten the values of one or more stakeholder groups. A reordering of priorities will be needed in order to make the difficult choices that need to happen to solve the problem of drug shortages. Many ethical issues surround medication shortages. Some of them are at the patient level, but many are societal. Addressing these issues preemptively will allow more streamlined care and decision-making when urgent situations arise. These discussions need to take place because based on the current way medications are supplied along with lobbying efforts of these entities and their rightful pursuit of profit, complete rectification of the problem is unlikely any time in the near future. The search for a solution must be attempted for the sake of the patients; not just the current ones but the future ones as well. However, until that occurs, ethical preparation is an imperative.

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References

End-Of-Life Issues: Withdrawal of Life-Sustaining Therapy—Religious Perspectives

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End-of-Life Issues

A patient was being cared for by home hospice. The implantable cardioverter defibrillator (ICD) was not turned off. The patient’s wife watched her husband die as the ICD shocked him more than 30 times before the battery ran down.¹

A patient with a history of coronary artery disease and complete heart block, for which a pacemaker was placed, was admitted with hypotension due to sepsis. The patient’s medical status continued to decline. The patient requested comfort measures only and that cardiopulmonary resuscitation (CPR) not be done, as delineated in her advance directive. The patient later requests the pacemaker to be turned off. The consulting service feels uncomfortable turning off the pacemaker.

Care at the end of life can present challenging situations for the patient, the patient’s family, and the physician. In addition to medical and legal concerns, the physician’s own comfort level may raise issues when granting a patient’s request to deactivate a pacemaker, ICD, or ventricular assist device (VAD). Early discussion about deactivating these life-sustaining therapies is essential to avoid unnecessary ICD shocks in the final moments of life, which can be distressing to both patients and their families.

Life-sustaining therapies are increasingly being used. In the United States from 2004 to 2010, the annual number of pacemaker insertions increased from 170,000 to 370,000, and the annual number of ICD implants increased from 68,000 to 97,000.²,³ VADs, originally used as bridge to transplant devices, are now increasingly being placed as permanent or destination therapy. Yet, fewer than 500 VADs are implanted for destination therapy in the United States each year, secondary to complication rates, cost, and high risk-to-benefit ratio.⁴

Most patients with these implanted devices are elderly. From 2001 to 2006, nearly 85 percent of the pacemakers and 60 percent of the ICDs were placed in patients aged 65 years or older.¹ According to U.S. Census Bureau Projections, the number of persons aged 65 years and older will more than double between 2015 and 2060, from 47 million to more than 90 million.¹ Thus, physicians will be caring for an increasing number of elderly patients with these life-sustaining therapies, and they may receive requests from patients and their families to address end-of-life issues.

In a prospective survey of deaths in U.S. intensive care units, limiting life-sustaining treatments is a predominant practice.⁶ Physicians may receive requests from patients and/or their families to withdraw or withhold these life-sustaining treatments. Withholding life-sustaining therapy is “the considered decision not to institute a medically appropriate and potentially beneficial life-sustaining therapy.”⁷ Without the knowledge or consent of the patient, withholding or withdrawing treatment can be legally questionable and may have serious consequences.

Withholding life-sustaining therapy is “the considered decision not to institute a medically appropriate and potentially beneficial life-sustaining therapy.”⁷ Without the knowledge or consent of the patient, withholding or withdrawing treatment can be legally questionable and may have serious consequences. Patients and their families may have unrealistic expectations for outcomes and may be influenced by others (e.g., physicians, nurses, and religious leaders). Patients and families may wish to discuss the expectations with the physician and others involved in the care of the patient. The patient should be given the opportunity to make decisions, to the extent possible.

Physicians should anticipate that patients or families may request discussions about life-sustaining therapies. Physicians need to be aware of their own comfort levels to be prepared to discuss these situations with patients and families. Discussion should include the rationale for inserting the ICD or pacemaker, the potential complications, and the alternatives (e.g., continued support care and hospice care). Patients and families should be given time to consider the options and to discuss their preferences with the physician. The physician should be honest about the potential complications and the outcomes of these decisions.

Physicians should discuss the options available to the patient and to their families. Physicians should consider the patient’s wishes and to respect the patient’s autonomy and values. Physicians should also consider the patient’s values and preferences and to respect the patient’s autonomy and values. Physicians should also consider the patient’s values and preferences and to respect the patient’s autonomy and values. Physicians should also consider the patient’s values and preferences and to respect the patient’s autonomy and values. Physicians should also consider the patient’s values and preferences and to respect the patient’s autonomy and values.
therapy, with the understanding that the patient will probably die without the therapy in question.” Withdrawing life-sustaining therapy is “the cessation and removal of an ongoing medical therapy with the explicit intent not to substitute an equivalent alternative treatment; it is fully anticipated that the patient will die following the change in therapy.”

It is ethical and legal for patients to refuse treatments and to request withdrawal of treatments, including turning off pacemakers, ICDs, and VADs. In the United States, the legal justification for these actions is primarily by way of the informed consent and informed refusal principles. In the Quinlan case, the New Jersey Supreme Court ruled that an individual’s privacy rights include the right to refuse medical interventions. In the Cruzan case, the U.S. Supreme Court upheld the argument that a competent patient’s right to refuse medical interventions is an interest protected under the Fourteenth Amendment to the U.S. Constitution. The Cruzan decision strongly supports the right of persons who are rendered incompetent to refuse treatment based on living wills, durable power of attorney, and previous explicit statements. Furthermore, no court in the United States has held a physician liable for wrongful death or murder where the physician was honoring a patient’s or surrogate’s request to refuse or withdraw life-sustaining treatments.

The principle of autonomy underscores the patient’s right to initiate, continue, or withdraw medical treatments that are intended to treat the primary terminal illness or other condition. The Study of Ethical Problems in Medicine and Biomedical and Behavioral Research and the Guidelines on the Termination of Life-Sustaining Treatment and the Care of the Dying recommend that medical treatments should be based on the potential benefit versus burden to the patient. Benefit is “determined by the patient’s assessment of the value or desirability of the treatment’s result.” Burdens are “the cost, discomfort, pain, and inconvenience, of the treatment in question; it includes his or her quality of life assessment.” Hence, life-sustaining treatments initiated in emergency situations should be discontinued if it is later determined that the patient would not have wanted the intervention.

Withdrawing or withholding medical treatment is not physician-assisted suicide or euthanasia. In physician-assisted suicide, the physician provides an external means by which the patient personally terminates his or her life. In euthanasia, the physician directly terminates the patient’s life. Physician-assisted suicide and euthanasia cause death regardless of disease. In withholding or withdrawing treatment, the patient often dies as a result of his or her underlying disease and not necessarily due to the withdrawal or withholding of treatment. The deactivation of an ICD, which often spares the patient unnecessary shocks and the patient’s family undue distress, is considered the withdrawal of treatment because the patient’s death is the result of the underlying disease. Likewise, the deactivation of a continuously operating pacemaker, like ventilators, may lead to a rapid death or a slow death due to bradycardia and subsequent organ failure, but the patient’s death will be the result of his or her own underlying disease process.

A pacemaker or ICD can be deactivated without an invasive procedure, similar to discontinuing a ventilator. Most pacemaker generators cannot be turned off, but the rate and output voltage can be turned down to a level to make them essentially nonfunctional.

A patient’s request to deactivate life-sustaining treatments should be carried out whether the patient is at home, a hospice facility, a nursing home, or a hospital. In a cross-sectional survey, Goldstein et al. found that 97 percent of hospice facilities admitted patients with ICDs, yet only 10 percent of them actually had a policy addressing deactivation. Hospice facilities that had policies addressing deactivation had a higher percentage of device deactivation (73 percent versus 38 percent). None of the facilities, however, had a policy that required deactivation of these devices. Goldstein et al. also found that although 64 percent of hospices provided training in the use of the magnet, only 25 percent of hospices had a magnet to deactivate ICDs.

Should a do not resuscitate (DNR) order be interpreted as authorizing deactivation of a pacemaker, ICD, or VAD? Paola and Walker, using biofixture (i.e., an intrinsic part of the patient) analysis, showed that specific consent for the deactivation of ICDs should be obtained. If a DNR order is obtained when an ICD or pacemaker is already active, and discontinuation of the ICD or pacemaker was not specifically discussed, then a second consent to withdraw the ICD or pacemaker should be obtained. This is analogous to a situation where a patient is intubated before obtaining a DNR order. The family would reasonably expect the physician to obtain a specific consent to discontinue the ventilator.

Early discussion about deactivating these life-sustaining therapies will avoid shocks in the final moments of life and avoid undue distress to patients and their families. Patients who prepared advance directives received care that strongly reflected their preferences. End-of-life discussions are associated with less aggressive medical care and better patient quality of life near death. Those patients with better quality of life near death had caretakers who experienced less regret and had improvements in physical and mental health in the grieving period.

When addressing end-of-life issues, physicians need to consider patients’ cultural and religious beliefs. A lack of understanding of religious beliefs may lead to confusion, conflict, and untoward clinical events. To prevent conflict, physicians should enhance their knowledge of and respect for their patients’ religious beliefs. Physicians, however, do not seem to inquire often about their patients’ religious beliefs.

Monroe et al. surveyed primary care physicians at teaching hospitals and found that 84.5 percent of the physicians thought they should be aware of the religious beliefs and spirituality of their patients. However, most of these physicians did not ask about these issues unless a patient was dying. Less than one-third of the physicians thought they should ask about religious issues during a scheduled office visit. Ehrman et al. found that 66 percent of patients visiting an outpatient pulmonary center agreed or strongly agreed that they would like their physicians to inquire if they had religious beliefs that would affect their medical decisions if they became very ill. Furthermore, 66 percent of the respondents thought this dialogue would strengthen their trust in their
physician. In a survey of adult inpatients, King and Bushwick showed that 77 percent of the respondents thought physicians should consider patients’ spiritual needs; however, 68 percent said their physician had never discussed religious beliefs with them.

A variety of opinions have been expressed regarding end-of-life issues among religions and within each religion. Furthermore, an individual’s understanding and practice of his or her religion can be unique to that individual. This reinforces the need for physicians to discuss and clarify their patients’ specific religious and cultural beliefs regarding end-of-life issues. Following are the religious perspectives on end-of-life issues for three monotheistic religions: Orthodox Judaism, Islam, and Catholicism.

**Judaism**

Jewish medical ethics is based on the precepts of Jewish law (Halacha). Unlike U.S. jurisprudence, Jewish law distinguishes between the withdrawal and withholding of life-sustaining therapies. Jewish law also differentiates between active and passive acts. Halacha permits passively allowing events to occur, yet forbids acting in a manner that hastens death.

Orthodox, Conservative, and Reform sects are different branches of Judaism that are distinguished by various degrees of observance of Jewish law. Among and within each of these sects, there are a variety of opinions regarding end-of-life issues. This, again, reinforces the need for physicians to discuss and clarify each patient’s religious and cultural beliefs regarding end-of-life issues. The following information pertains to terminally ill patients from an Orthodox Jewish perspective.

**Suicide, Assisted Suicide, and Euthanasia**

Judaism values human life: “Man’s body and his life are not his to give away … the proprietor of all human life is … God.” Thus, suicide, assisted suicide, and euthanasia are forbidden under Jewish law.

**Withholding Treatment**

Jewish patients are obligated to take care of their health and seek beneficial treatment when possible. However, those patients who are near the end of life, comatose, or suffering from pain are allowed, according to Jewish law, to withhold treatment if the physician judges the treatment to be futile, to involve great complications, to delay the dying process, or to involve suffering. Nevertheless, hydration and nutrition (by the oral route, feeding tubes, or intravenous lines) are not considered medical interventions but are considered basic supportive care (similar to washing or grooming a patient) and must be provided to the patient. However, if a competent adult Jewish patient refuses hydration or nutritional support after attempts have been made to convince the patient to agree to the care, one must respect the patient’s wishes. With regard to oxygen therapy, if endotracheal intubation is withheld, a means of oxygen therapy should be administered to decrease patient discomfort. Under Jewish law, there is no obligation to prolong pain and suffering of a dying patient, but any action that intentionally and actively shortens life is prohibited.

Cardiopulmonary resuscitation (CPR) may be withheld from or refused by Jewish patients who are terminally ill. For patients who are near the end of life, CPR may only serve to delay the dying process and may increase pain and suffering. Halachic authorities recommend that a family should consult with their rabbi in situations involving the consideration of a DNR order.

**Withdrawal Treatment**

The withdrawal of interventions is generally not allowed under Jewish law. Many Orthodox Jewish authorities differentiate continuous and intermittent modes of treatments with respect to the withdrawal of treatments. Withdrawing continuous forms of treatments (pacemaker or ventilator) is forbidden as it is withdrawing care and actively expediting death. Withdrawing intermittent forms of treatment (chemotherapy or an ICD) is accepted because each new treatment cycle requires a new decision to either administer (renew) or withhold the treatment.

In this situation, omitting the next treatment is withholding the treatment, not withdrawing the treatment.

**Mechanical Ventilation**

When a terminally ill patient is dying, the physician is not compelled to place the patient on a mechanical ventilator. Although mechanical ventilation may be withheld, once mechanical ventilation has begun, it may not actively be withdrawn. Some Halachic authorities allow the patient to be placed on mechanical ventilation with a timer so that care is not actively withdrawn. The timer shuts off the ventilator after a set amount of time (e.g., one week). At this point, the physician reevaluates the patient’s medical condition and, if the patient’s condition is improving, a decision can be made with the family and a rabbi as to whether the ventilator should be restarted. Most importantly, one must have the presence of mind to know to start the timer when the patient is initially placed on mechanical ventilation.

Alternatively, to avoid active withdrawal of care, oxygen cylinders may be used instead of a central wall oxygen source to support the mechanical ventilator. The use of oxygen cylinders allows the conversion from a continuous to time-limited (intermittent) treatment. When the oxygen cylinder is depleted, the physician, along with the family and rabbi, can decide whether the oxygen tank should be replaced with a new tank.

Interestingly, in 2005, the Dying Patient Act was passed in the Israeli Parliament. Under this act, a dying patient is defined as a patient expected to die within six months despite medical therapy. This act is the first law worldwide regulating medical care at the end of life. It is based on ethical and cultural assumptions derived from Jewish law and values. The Dying Patient Act calls for the placement of timers on mechanical ventilators to convert continuous medical treatment to discrete treatment.
2015 SYLLABUS ON ETHICS

Pacemakers, Implantable Cardioverter Defibrillators, and Ventricular Assist Devices

Continuous forms of treatment, like a cardiac pacemaker or a VAD, are forbidden to be withdrawn. However, an ICD is an intermittent form of treatment and, thus, can be withdrawn under Jewish law.

Advance Directives

A durable power of attorney for health care is acceptable for Jewish patients. The patients designate a health care proxy and a preferred rabbinical authority to aid in medical decision making in the event that the patients are unable to personally make and communicate their decisions.

Islam

The Quran and Sunnah constitute the foundations for religious life among Muslims. Islamic bioethical views vary with degrees of religious observance and among different sects within Islam. Most Islamic communities will defer to the opinion of their own recognized religious scholars because the Islamic faith is not monolithic but has a diversity of views.

Suicide, Assisted Suicide, and Euthanasia

For Muslims, life is sacred, a divine trust, and its term is fixed by an “unalterable divine decree.” Euthanasia, physician-assisted suicide, and suicide are forbidden.

Withholding and Withdrawing Treatment

Terminally ill Muslim patients are permitted to have life-sustaining treatments withheld or withdrawn if the physician judges the treatment to be futile, to not improve the patient’s condition or quality of life, to involve great complications, to delay the dying process, or to involve suffering. However, it should be a collective decision made on the basis of informed consent after consultation with the patient’s family and all persons involved in providing care. In these situations, death is allowed to take its natural course. Basic nutrition should not be discontinued because such an action would starve a patient to death—a crime in the Islamic faith.

Advance Directives

A durable power of attorney of health care is acceptable for Muslim patients. Patients not capable of making health care decisions can call upon an authorized representative to express their wishes and make treatment decisions on behalf of their best interest.

Catholicism

Christianity upholds the sanctity of human life as a creation of God. Christianity encompasses many religious groups, including Catholics, Lutherans, Orthodox Christians, Unitarians, Seventh-Day Adventists, Mormons, and Anglicans. These groups differ in matters of bioethics involving end-of-life decisions. The following information pertains to terminally ill patients from a Catholic perspective.

Suicide, Assisted Suicide, and Euthanasia

Catholicism believes that life is a gift from God and that people are stewards, not owners, of their bodies and are accountable for the life that God has given to them. Suicide, assisted suicide, and euthanasia are forbidden.

Withholding and Withdrawing Treatment

Catholic patients are obliged to choose ordinary means to preserve life, yet may decline extraordinary means to preserve life. Gerald Kelly defines ordinary means of preserving life as “all medicines, treatments, and operations which offer a reasonable hope of benefit for the patient and which can be obtained and used without excessive expense, pain, or other inconvenience.” Kelly goes on to define extraordinary means of preserving life as “all medicines, treatments, and operations, which cannot be obtained without excessive expense, pain, or other inconvenience, or which, if used, would not offer a reasonable hope of benefit.”

Terminally ill Catholic patients are permitted to withhold and withdraw life-sustaining treatments if the patient and family judge these methods to be extraordinary. These life-sustaining treatments include CPR, mechanical ventilation, pacemakers, and VADs. Hydration and nutrition, including by medically assisted means, are considered ordinary means to preserve life and must be provided to patients, including those with apparently chronic irreversible conditions who are expected to live indefinitely. The administration of nutrition and hydration by natural or medically assisted means is not morally obligated when food and water cannot be processed by the patient’s body, causes significant physical discomfort, or becomes a burden to the patient. In regard to oxygen therapy, if endotracheal intubation with mechanical ventilation is chosen to be withheld, a means of oxygen therapy should be administered to decrease patient discomfort. The U.S. Conference of Catholic Bishops, which guides Catholic-sponsored health care in the United States, states that “the free and informed judgment made by a competent adult patient concerning the use or withdrawal of life-sustaining procedures should always be respected and normally complied with, unless it is contrary to Catholic moral teaching.” Furthermore, the group states that “reflection on the innate dignity of human life in all of its dimensions and on the purpose of medical care is indispensable for formulating a true moral judgment about the use of technology to maintain life.”
Advance Directives

A durable power of attorney of health care is acceptable for Catholic patients. Patients not capable of making health care decisions for themselves in partnership with their physician can call upon designated family members or substitute decision makers to make treatment decisions on behalf of their best interests.

Summary: Religious Perspectives

Judaism, Islam, and Catholicism all uphold beneficence and nonmaleficence. In terms of autonomy, Catholicism focuses on the patient’s decision for treatment, while Islam and Judaism incorporate the judgment of religious advisers into the determination of what is best for the patient’s health and welfare in accordance with religious laws.

Physicians need to be aware of their patients’ understanding and practice of religion and the possibility that some suggested procedures or treatments could seriously disregard the patient’s beliefs and lead to predicaments of the patient’s conscience. Discussing the religious beliefs of patients early in their care is imperative, especially before the commencement of life-sustaining treatments.

Recommendations

As life-sustaining therapies are increasingly being used, it is essential for physicians to openly discuss end-of-life issues and the possible withdrawal of life-sustaining therapies with their patients. Furthermore, physicians need to discuss and clarify their patients’ specific religious and cultural beliefs regarding end-of-life issues. The following steps are recommended before a life-sustaining treatment, such as a pacemaker, ICD, or VAD, is initiated.

Initiation of Life-Sustaining Treatment

- Before initiating a life-sustaining treatment, the physician should ensure that the patient has a clear understanding of his or her health condition; the actions of the pacemaker, ICD, or VAD; and the consequences of withdrawing or deactivating the device at a later date should the therapy be ineffective, no longer needed, or no longer desired by the patient. One study reported that clinicians discussed deactivating the ICD with the next of kin in only 27 of 100 cases.46
- The patient should be encouraged to have an advance directive to communicate his or her wishes, not only with respect to DNR but also with respect to life-sustaining treatments, such as pacemakers, ICDs, and VADs.
- The physician should record the patient’s preferences in the medical record and encourage the patient to communicate his or her wishes to surrogates and in an advance directive.

Patient Beliefs and Physician Values

- The physician should be aware of and sensitive to patients’ cultural and religious beliefs.
- A physician whose values and goals conflict with the patient’s goals and values should transfer the patient’s care to another physician with comparable skills and competency.
- In ambiguous situations, an ethics consult should be sought.

Life Changes

- A system should be in place to be able to contact an individual to carry out the patient’s wishes to withdraw treatment, whether the patient is in his or her home, a hospice facility, a nursing home, or a hospital.
- A patient’s goals and preferences should be revisited after significant life changes.

Learning Objectives

1. To discuss the differences between withholding and withdrawing medical treatments
2. To explain the differences between withholding/withdrawing life-sustaining treatment and euthanasia
3. To understand the importance of discussing a patient’s religious perspectives of end-of-life issues

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Case Scenario

Refusing Care

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Case Scenario

Mr. A, a 60-year-old man with severe peripheral vascular disease, presents for placement of a jejunostomy feeding tube because of inability to eat after a below-the-knee amputation. As a result of multiple cerebrovascular accidents, he has a right hemiparesis and an expressive aphasia. Because of difficulty swallowing, he has problems with chronic aspiration and has been hospitalized multiple times for treatment of pneumonia. During the current hospital admission, he has refused medications and has given up trying to eat. He indicates with difficulty that he “only wants to die.” He refuses to discuss anesthesia, beyond saying that he does not want surgery and wants to die. Is he competent to refuse therapy?

Use a systematic approach to evaluate and discuss the clinical ethical problems presented by this case.

- What are the medical indications, risks, benefits, and alternatives to the placement of a jejunostomy tube to provide nutrition?
- What are the quality-of-life expectations from the patient?
- Are there any contextual features that should be considered?
- What features distinguish competent from incompetent patients?
- What resources are available to an anesthesiologist to aid in the evaluation of patient competency?

INSTRUCTOR’S NOTES

The Four Questions

In order to discuss the issues of a clinical ethical problem, whether it be in the setting of a learning discussion or in the clinical setting in which the problem must actually be solved, it is important to be able to outline the features of the case in an organized and coherent fashion. Just as clinical progress notes often follow a common format, so should ethical case discussion. In clinical progress notes, we might organize our communication in an organized and coherent fashion. Just as clinical progress notes often follow a common format, so should ethical case discussion. In clinical progress notes, we might organize our communication in an organized and coherent fashion.

Additional Resource

Ethics CME Webinar: Withdrawal of Pacemakers, ICDs, and VADS. American Society of Anesthesiologists.

Acknowledgments

Thank you to Cynthia J. Morgenweck, M.D., M.A., for the verification of the religious perspectives of Judaism, Catholicism, and Islam, respectively, thank you to Rabbi Meir Moscovitz, Mark Kuczweski, Ph.D., and Imam Ousmane Drame.
patient autonomy (the principle that competent people can decide for themselves what will be done to them) and justice (the principle that people should be treated fairly with regard to what resources are owed to them). The four categories proposed by Jonsen can be expressed in the form of four questions each student should answer about the case under discussion:

1. What are the medical indications, risks and benefits, and alternatives of the treatment being proposed? (Illustrating the principles of beneficence and nonmaleficence from the medical point of view.)

2. What are the quality-of-life expectations from the alternative choices? (Illustrating the principles of beneficence and nonmaleficence from the point of view of the patient’s values.)

3. What are the patient’s preferences? (Illustrating the principle of respect for patient autonomy.)

4. Are there any contextual features that should be considered? (Illustrating consideration of the principles of justice.)

**Question 1: Medical Indications**

The medical indications for the proposed procedure are to provide nutrition for the patient, in whom inability to eat combined with complications of attempts at oral nutrition have led to a search for alternative methods of alimentation.

Alternative methods of dealing with the nutritional issues include:
- Continued attempts at oral nutrition
- Placement of a feeding tube into the jejunum by oral or nasal route
- Gastrostomy
- Jejunostomy
- Hyperalimentation via central venous access

Each method has advantages and disadvantages. Continued attempts to use the oral route of nutrition have failed and have the disadvantage of predisposing the patient to the complication of aspiration. Oral feeding involves hard work on the part of the patient, which may be exhausting and discouraging, contributing to depression and the patient’s desire to give up. Feeding tubes by oral or nasal routes have some associated physical discomfort and may carry the complication of nasal erosion. In addition, they are visible and, as such, may present unacceptable characteristics to patients. Gastrostomy or jejunostomy (with or without feeding tubes) have the disadvantage of being invasive, requiring a surgical procedure with potential complications of anesthesia and surgery, however unlikely they might be. But alimentation is simplified, uses the patient’s gastrointestinal tract for nutrition, and may be more aesthetically pleasing to the patient than a nasogastric tube. Hyperalimentation requires central venous access, which has potential complications, and more specialized care in the use of nutritional materials. In addition, nutritional supplies are expensive.

**Question 2: Quality of Life**

Some aspects of the patient’s quality of life may improve with better nutritional access. Better access may decrease the number of episodes of aspiration and subsequent hospitalizations for intravenous antibiotics. Better nutrition may provide the patient with more energy, better ability to fight infection, and better ability to respond to physical therapy. The patient may feel less depressed and hopeless.

Improved nutrition is almost certain to improve this patient’s sense of physical well-being and to promote improved survival. Failure to provide adequate nutrition is likely to contribute to the patient’s inability to fight infection, lack of energy, listlessness, and depression.

Prolongation of this patient’s life may or may not be a net benefit to the patient, depending on how he views his potential best-case scenario. Possibly, the patient’s functional level is so poor that he sees prolongation of his life as unwanted further suffering.

**Question 3: Patient Preferences**

The patient states that he does not want surgery and wants to die. The right of a competent adult to make such a decision is supported by the ethical principles respecting autonomy and legal precedents stating that “every person of adult years and sound mind has the right to determine what shall be done to them”. When considering patient statements of their preferences, we have an obligation to patients to facilitate and support their ability to make independent and unencumbered decisions. Is this patient’s ability to decide affected by correctable encumbrances? One example of an encumbrance is inadequate information: Has the patient had a reasonable opportunity to hear the advantages and disadvantages to the proposed treatment? One study showed that physicians were far less likely to try to discuss end-of-life decisions directly with the patient if the patient was thought to suffer from mental impairment. Many patients with mild forms of mental impairment are perfectly capable of participating in medical decisions.

Another potential encumbrance for this patient is a physical impairment in the ability to express himself. Patients with expressive aphasias often suffer from some receptive aphasias as well. Are there ways in which we can better determine whether the patient is being given an adequate opportunity to understand and then express his wishes? Is the patient suffering from dementia or other organic brain problems that might call into question his competence to make decisions? Finally, is the patient depressed, and if so, is depression preventing him from making an unencumbered decision? The mere presence of depression itself does not imply incompetence.

What other resources can we use to evaluate the ability of this patient to make decisions? We can ask experts, such as rehabilitation specialists, to help us evaluate the patient’s ability to understand options and express decisions. Psychiatric evaluation may help clarify the extent of depression and whether it impairs decision-making.
Family and friends may be able to tell us if the decision to forgo care is consistent with past decisions and whether it is in general agreement with the philosophical context of the patient's life.

A primary care physician may be able to tell us about any discussions he or she had in the past with the patient about care and what the patient's approach has been. A review of past medical records may reveal a previous expression of the patient's wishes regarding medical care and support toward the end of life. In short, many resources exist to help determine if the patient's decision appears autonomous and consistent with past decisions.

**Question 4: Contextual Features**

Contextual features are those that might influence the flavor of the case. For example, legal aspects of such a case may influence a physician's decision. As the court suspected in the case of Karen Ann Quinlan, physicians do in fact base some decisions on fear of litigation and self-interest. Note, however, that self-interest is not an ethical principle and cannot be used to ethically justify an act.

Are medical resources being used fairly? Should expensive care be allotted to a patient who does not wish to live under these conditions? Are family members exerting influence? Family members may, out of a sense of guilt or helplessness, exert pressure to ignore a patient's wishes to be allowed to die. Alternatively, family members may suffer from conscious or unconscious motivations to support a death wish.

Are the physicians and other caregivers subject to subconscious motives? Physicians who are overly reluctant to accept a patient's decision may be imposing their own values and anxieties on the patient, including fear of professional failure. Physicians who are overly anxious to accept the patient's decision without determining that it is unencumbered may be responding to suffering that they themselves experience in caring for an ungrateful patient.

Do financial considerations have undue weight in the patient's decision? If the patient is afraid of impoverishing family resources, he or she may be pressured to relinquish medical options. Many kinds of outside influences may appropriately or inappropriately affect the way in which we respond to a patient's wishes.

**Case Development**

Once the initial outline of the case has been carried out, we can now develop the case to include specific educational points. Using the syllabus as a resource for answers, a model case development might include the following questions:

Is Mr. A competent to refuse therapy?

- Are there features of the case presentation that suggest problems with Mr. A's competency?
- What evidence in the case presentation do you have to support his competency?
- What are the features of competency?
- What does Mr. A's refusal of medical care indicate about his competency?
- Suppose, instead of multiple cerebrovascular accidents, Mr. A suffered from schizophrenia! Is he more or less likely to be found competent by an expert consultant?

Mr. A's wife appears tearful and confused about the medical issues. She is unwilling to sign a consent form for the surgery, saying that she does not want to go against her husband's wishes. His daughter, on the other hand, insists that surgery proceed and, at the request of the surgeon, has signed a consent form. The surgeon reports to you that a valid consent has been obtained for the procedure and demands that you proceed.

- Is the daughter's consent legally valid?
- What is the legal order of surrogacy in your state?
- What is the likelihood that Mrs. A has had a direct discussion of these care issues with Mr. A?

You decide not to proceed until the issues are clarified, and you request a competency evaluation for the patient. The consultant returns the opinion that the patient is probably not competent, based on the presence of severe impairment from organic brain disease and both receptive and expressive aphasia. The daughter insists that surgery proceed, and the wife still refuses to sign the consent. Both present conflicting perspectives on what the patient would want. The surgeon wonders why you are holding up the surgery because you now know the patient is likely incompetent, and the surgeon has a signed consent from a surrogate.

**What Should You Do?**

It is not uncommon for family members to be in conflict with one another about what should be done in the care of a patient who is incompetent. Resources to remember include family counseling, the hospital ethics advisory committee, and even the court system, which may go so far as to appoint a guardian ad litem to determine the patient's best interests.

**The Rest of the Story**

This case represents a real scenario from clinical practice. The case was halted until a competency evaluation could take place. In fact, problems with communication proved to be the major obstruction to discussion with the patient. With patience and some help from rehabilitation specialists, the patient ultimately agreed to have surgery. His depression has improved.

**References**

When Does Massive Resuscitation of a Trauma Patient Become Futile?

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Case Study

A middle-aged, morbidly obese man severed his right proximal arm in a vehicular rollover. Paramedics had intubated him in the field. Cardiopulmonary resuscitation (CPR) was initiated during transport. The senior anesthesia resident who had gone to the emergency department (ED) reported that the patient’s “pupils were dilating.” Open thoracotomy was performed for cardiac massage. After three decades of trauma anesthesia, my conclusion was that the patient was not going to survive, and he would not be coming to the operating room (O.R.). I was mistaken.

For the next four hours, the trauma surgeons opened him from chest to pubis after surgically completing the traumatic amputation of the arm, searching for bleeders. Intermittently, they would squeeze the heart in their fists to circulate the CPR medications because there was minimal blood pressure. Despite one ampoule of sodium bicarbonate administered intravenously immediately upon arrival to the O.R. while the arterial line was being inserted, the first pH was 6.9, and there was significant respiratory and metabolic acidosis.

My team of young energetic anesthesiologists fired up the rapid infuser to inject approximately 300 units of blood products, maintaining the current practice of 1-to-1 ratio of packed red cells to fresh frozen plasma, enhanced with platelet packs, cryoprecipitates, and some balanced crystalloids. We kept him alive, if alive is defined by a beating heart being hammered with epinephrine, phenylephrine, vasopressin, calcium chloride, and human fists. At one point of the massive transfusion protocol, the blood bank called to ask whether we really needed more blood products. Considering the patient had not officially been pronounced dead, I was forced by medicolegal pressure to answer affirmatively.

When the surgeons’ direct-eye observations yielded no bleeder, their next decision was to move the patient to the interventional radiology (IR) suites. From my perspective, the nonstop bleeding issued from the nonstop transfusions.

Unsuccessful in IR, the patient and his extensive entourage of anesthesiologists, surgeons, nurses, attendants pushing the nonstop rapid infuser, coolers full of more precious blood products, loaded syringes of vasopressors, a spaghetti mix of fluids, and intravenous tubings and pumps blinking potent elixirs of life, rode up the elevator to the intensive care unit (ICU). Two hours later, the same entourage descended, headed again to the IR suites. The anesthesiology team signed off active care at 6:40 a.m.; the patient coded again at 6:50 a.m. The myocardium had been so slogged by the entire resuscitation process that open heart massage resulted in a hole in the heart. The patient was pronounced—officially—dead at 7:00 a.m. His pupils had been fixed and dilated since his initial arrival to the O.R. more than 12 hours earlier.

Introduction

Primum non nocere. Physicians are not to commit harm upon our patients. The Hippocratic Oath seemed to have been forgotten in the rush to save this life. We used up most of our blood bank supplies and advanced cardiac life support (ACLS) drugs, which are in short supply, on one dying man. Did we forget the humanity of this patient while we tried to optimize his hemoglobin, arterial blood gases, electrolytes, and vital signs?

This article explores questions that many seasoned trauma anesthesiologists have undoubtedly asked themselves. A literature search was done to look for rational answers on (1) termination of resuscitation (TOR) of CPR in out-of-hospital settings; (2) likelihood of survival for trauma patients, especially those requiring open thoracotomy upon arrival to the ED; and (3) the emotional topic of futility in the intensity of trauma.

Why wasn’t the patient pronounced dead at the scene? Most people do not carry around advance directives concerning their health care in the unpredictable event of major trauma. The ethical challenge of knowing when to start or terminate resuscitations has been asked for decades. In 1992, Jecker and Schneiderman commented that “the judgment that resuscitation is futile ought not to depend on a patient’s prior wishes. Instead, it should reflect a professional consensus and receive support from reliable empirical data.” They issued a call to develop policies and protocols based on the best available knowledge of patient survival statistics. Rejected are assumptions of using all modalities at our disposal to save one dying person. Standards set by professional organizations and legislatures need to provide protection for all participants in the health system, including the patient.

The Uniform Determination of Death Act is endorsed by the American Medical Association (AMA) and the American Bar Association. A person “who has sustained either 1) irreversible cessation of circulatory and respiratory functions or 2) irreversible cessation of all functions of the entire brain, including brain stem...” is dead. Decapitation, transection of the truncal body, rigor mortis, putrefaction, and pronounced dependent lividity are obvious signs of death. My patient was not clearly dead.

Unless a patient wears an obvious do not resuscitate (DNR) tag, well-trained paramedics will reflexively begin ACLS protocols, including CPR, according to standards promulgated by the American Heart Association (AHA). At a major accident, paramedics cannot waste precious time to check for distant DNR orders or advance directives or to assess the legal capacity of the patient who is likely becoming unconscious. They do not determine the reversibility or irreversibility of life processes. They are usually not legally empowered by their state to make pronouncements of death. They scoop and run. A fundamental tenet of the emergency medical technicians’ (EMT) code of ethics is “to conserve life.”

Through the years, the National Association of EMS Physicians (NAEMSP) has issued position papers on TOR for nontraumatic and traumatic cardiopulmonary arrests. Outcome reports on cardiac arrests and resuscitation registries have
collected data using the Utstein templates for in-hospital and out-of-hospital events in hopes of finding international consensus on science and resuscitation guidelines.\textsuperscript{3,4} Based on escalating research, NAEMSP recommends reducing the use of emergency response for a patient who has extremely limited to no chance of survival. An unsuccessful resuscitation has a cost. In consideration of scarce health care resources, these costs should be taken into account when determining the value of a TOR protocol.\textsuperscript{5} Reasons for TOR protocols include increasing rates of serious injuries to paramedics involved in crashes, particularly at intersections and traffic signals, as well as risk to the driving public when paramedics transport a patient in an ambulance with lights and sirens.\textsuperscript{3} When the original patient is dying, the irony of having more innocent people hurt becomes even more unacceptable.

Dying patients are still transported to the ED because TOR protocols have not been uniformly accepted for many reasons. Fear of medical malpractice continues to cloud physicians' perceptions despite evidence demonstrating low likelihood of a successful suit for wrongful death.\textsuperscript{5} Some states (e.g., Minnesota, Mississippi, Nebraska, North Dakota, South Dakota, Vermont) legislate prehospital resuscitation by their absence of statutes recognizing the validity of out-of-hospital DNR orders, bracelets, or cards or directives for comfort care only. Emergency medical service (EMS) personnel demonstrate a strong rescue mentality, and some are incentivized by statutory and financial reasons to transport a patient, regardless of shape of health. The public also holds unrealistic expectations that half of the patients with out-of-hospital cardiac arrests survive. This may be partly due to medical resuscitations portrayed on television media that show 67 percent of actors surviving their arrests.\textsuperscript{6,7} The actual mean survival rate in the United States is closer to 7 percent.

As recently as 2009, the AHA identified barriers to local implementation of prehospital TOR protocols.\textsuperscript{1} In nontraumatic cardiac arrests, it recommends that an EMT with automated external defibrillators should consider TOR when cardiac arrest was not witnessed by EMS personnel, no defibrillatory shocks were delivered, and return of spontaneous circulation (ROSC) has not occurred. This “BLS [basic life support] TOR rule,” that is, the Verbeek TOR guideline, has been repeatedly validated and has a positive predictive value of 99.5 percent to 99.9 percent for death.\textsuperscript{5} To clarify the amount of time for ROSC, the 2010 AHA guidelines recommend TOR after three full rounds of CPR and automated external-defibrillator analysis. Currently, no well-validated recommendation includes a specific time interval before determining that ROSC will ever occur.

In 2006, the Institute of Medicine proposed convening an expert panel to create a national set of model guidelines for care to lessen the strains on EMSs across America. The American College of Surgeons Committee on Trauma (ACS-COT) and NAEMSP have issued periodic joint position statements.

In 2012, NAEMSP and ACS-COT issued a statement on TOR for adult traumatic cardiopulmonary arrest. The major focus of the adult trauma patient is efficient evacuation to definitive care where major blood loss can be controlled. Consideration of TOR may occur when there are no signs of life, with no ROSC despite EMS treatments of minimally interrupted CPR and other resuscitative measures for up to 15 minutes.\textsuperscript{6} A persistent end-tidal CO\textsubscript{2} of 10 mm Hg or less for 20 minutes after start of ACLS has also been used as an objective predictor of death.\textsuperscript{1}

TOR protocols have exclusions. Cases involving children, people with hypothermia, those struck by lightning, or pregnant mothers with potentially salvageable babies receive full resuscitation codes. Also, NAEMSP recommends that EMS personnel not implement TOR protocols until their personal safety can be more secured, such as away from large crowds.\textsuperscript{6}

For adult trauma patients, EMS paramedics are caught in a quandary. Do they efficiently evacuate the victim to a nearby ED and interrupt high-quality CPR compressions during transport, or should they take time to assess for any ROSC to determine application of TOR protocol?

The paramedics brought my patient to the ED. This is where my blunt trauma patient and the entire team of health care providers became inextricably chained to a “catch-22” situation because TOR becomes impractical after transport has been initiated.\textsuperscript{8} Where was the exit for my dying patient? Did he meet the criteria of the Uniform Determination of Death Act? He was not in asystolic cardiac arrest. He appeared to be in post-traumatic, pulseless electrical asystole where, despite agonal respirations (treated by endotracheal intubation) and imperceptible pulses, his heart still beat faster than an unsalvageable 40 beats/minute.\textsuperscript{9} Was he in irreversible brain death if his pupils were starting to dilate? No neurosurgeons were available to answer my questions.

**Likelihood of a Trauma Patient’s Survival**

Trauma surgeons address four primary areas to determine reversibility of posttraumatic circulatory arrest and resuscitation pathways: (1) blunt or penetrating injury; (2) initial electrocardiogram rhythm; (3) presence of intact airway, preferably with endotracheal intubation; and (4) duration of pulselessness. Survival for trauma patients who received prehospital CPR is poor. Multiple studies have confirmed this fact. At one Level I trauma center, 60.7 percent of such patients did not survive to be officially admitted into the hospital. An additional 32.6 percent died on the first hospital day.\textsuperscript{10} Excluding primary ventricular fibrillation as a possible precipitating cause of trauma, waiving or stopping resuscitation efforts for a patient with blunt trauma is appropriate when the airway is intact but the patient is without pulse and respirations. My patient did not seem to meet TOR protocol out in the field.

**Should open thoracotomy have been performed on this patient with blunt trauma?** Resuscitation should continue for a patient with blunt trauma who loses discernible circulation within two to three minutes of arrival at a hospital, where open thoracotomy can be performed. Resuscitative thoracotomies should not be performed on a patient with blunt trauma who has received prehospital CPR for more than five minutes; shows no pupillary
responses, respiratory effort, or motor activity; or is in asystole. Resuscitative thoracotomy is considered futile in patients with blunt trauma who required prehospital CPR longer than five minutes due to uniformly dismal neurologic outcomes.9

On the other hand, patients with penetrating trauma, such as stab wounds or gunshot wounds, derive more benefit from prehospital CPR and resuscitative thoracotomies than do patients with blunt trauma when less than 15 minutes of prehospital CPR has occurred. Pericardial tamponade effectively responds to lifesaving thoracotomy.9 Patients with penetrating trauma who have received prehospital CPR for more than 15 minutes, show no signs of life, or are asystolic should not undergo thoracotomy if the possibility of cardiac tamponade has been ruled out.

My patient had left chest thoracotomy performed on him. The NAEMSP and ACS-COT guidelines have naysayers. Mostly retrospective studies of breaches of these protocols resulted in a few survivals (e.g., 4 of 89 patients who met criteria for TOR) and broadly concluded that CPR after traumatic cardiac arrest is not always futile.11,12 Hypoxia and electrical causes for cardiac arrest in combination with traumatic injuries were specifically mentioned as reasons to continue resuscitation, in addition to the NAEMSP and ACS-COT recommendation to continue resuscitations on young people; victims of drowning, lightning strikes, or significant hypothermia; and pregnant patients. The presence of ventricular fibrillation, which is reversible, might have accounted for some of the “saves.” Even the presence of senior medical staff was mentioned as beneficial in saving some patients with blunt and penetrating trauma.13

Notwithstanding protocols, my patient was rushed to the O.R. When does futility occur in the intensity of trauma care? What is medical futility? The term refers “to situations where the likelihood of achieving the goals of a medical intervention are extremely slim.”14 According to the Consensus Statement of the Society of Critical Care Medicine, treatment is futile when it does not accomplish its intended goal of beneficial physiologic effect.14 The likelihood that a blunt trauma patient who required prehospital CPR will survive neurologically intact to hospital discharge is abysmally low. Should physicians try to save the patient, regardless of the odds?

Since Hippocrates’ time, medical futility was part of the three major goals for medicine: cure, relief of suffering, and refusal to treat those “overmastered by their diseases.”15 Definitions continue to defy the medical profession. The AMA Council on Ethical and Judicial affairs declares that in the course of treating a critically ill patient, it may become apparent that further intervention will only prolong the final stages of the dying process. Further intervention is described as futile.16 Brody and Halevy17 categorized futility into four types: physiologic, imminent demise, lethal condition, and qualitative futility. They concluded that the unilateral limitation of life-prolonging interventions should not be based on unclear definitions of futility; perhaps resource allocation of health care is fueling the debate.

Quantitative and qualitative aspects of futility refer to the likelihood of achieving a specified goal. Quantitative assessments place a percentage value on the likelihood of something occurring; qualitative assessments define the worth of what may be achieved.

Waisel and Truog18 reasoned that the decision to perform CPR is based not only on the quantitative likelihood of survival but also on whether the qualitative aspects of survival are deemed worthwhile.18 A physician might determine that a potential 97 percent mortality risk from critical blunt trauma injuries is too high to justify doing CPR. What if the patient thinks a 3 percent chance of life, even as a neurologic invalid, is worthwhile? Whose values determine whether resuscitations should be started, continued, or stopped? When the physician makes a decision for an unconscious trauma patient, whether using substituted judgment or thinking of the best interests of the patient, either method might be a form of judgment colored by the physician’s own belief system.

Physiologic futility asks if treatment can achieve its physiologic objective. If the goal of CPR is medical vitalism, that is, achieving gas exchange and maintaining a heartbeat, then CPR and 300 units of blood products for my patient were not futile. Physiologic futility appears to have the least risk for physician value judgments.18 Murphy and Finucane19 define futility as “treatment that is so unlikely to succeed that many people—professional and lay persons—would consider it not worth the cost.” Waisel and Truog20 object to that definition as health care rationing. Considering the new world of Obamacare, futility must take into consideration society’s values. Physicians and patients are not the only players in health care. Taxpayers cannot continue to support the costs of massive resuscitations and ICU care when most patients with blunt trauma who require out-of-hospital CPR have less than a 3 percent chance of surviving physiologically intact. If the patient survives acutely to transition into a persistent vegetative state, society continues to bear the brunt of cost of care.

One segment of society has spoken. The Texas Advance Directives Act,20 according to its defenders, represents a fair, effective, and appropriate due-process method to resolve disputes about care for patients with terminal and irreversible illness.21,22 When physicians are at odds with the family over the care of the dying patient, the Texas legislature recognizes the concept of medically inappropriate treatment. By following the statute, physicians and hospitals are granted immunity from civil and criminal liability.15 The statute includes a new living will, defines end-of-life illnesses, and endorses the role of hospital ethics or medical committee to prevent judges from practicing medicine.

However, can health care costs be reduced by limiting intensive care at the end of life? This question was asked by Luce and Rubenfeld.23 The most expensive patients in the ICU cannot be easily predicted in advance because patients have indeterminate outcomes. Clinical prognostication in large groups might be easier than predicting individual patient survival rates. Indiscriminate efforts to deny access to the ICU might actually increase overall mortality. The authors recommend that all critically ill patients should receive a trial of intensive care unless patients do not want such. Palliation when the patient’s life is clearly terminal provides the greatest benefit in terms of comfort to the patient and family, regardless of the bottom line.
Deciding futility during the first O.R. visit was a moot point. However, what about the second and third visits? Would my patient have wanted all the heroes? Respect for patient autonomy is one of the four cornerstones of medical ethics, embedded with physician beneficence, nonmaleficence, and distributive justice. Because of my patient’s unconscious state, his family members needed to determine if they wanted nonstop massive resuscitations to save him. When he was admitted to the ICU, did physicians discuss his bleak prognosis and inform them about the possibility of DNR orders or TOR? Did the patient need the overtreatment, or was the physician’s need to defeat death the real reason?

Serious medical illnesses negatively affect patients and their families. Among older patients aged 60 to 99 years, initially 41 percent opted for CPR during an acute medical illness. Upon learning the low probability of survival of 10 percent to 17 percent, half the patients decided against receiving CPR. The Study to Understand Prognoses and Preferences for Outcomes and Risks of Treatment (SUPPORT), a multicenter prospective survey of 2,129 patients and surrogates, showed that 34 percent of patients who survived serious illnesses required considerable caregiving assistance from a family member. Nearly a third studied in SUPPORT reported losing most or all of the family savings, necessitating major changes in other family plans, such as downsizing to a less-expensive home, delaying medical care for others, and delaying education. Patients whose families were more likely to lose all or most of the family savings were younger, were nonwhite, had lower incomes, and had worse functional status than did patients not reporting loss of savings.

Health-related quality of life means the impact of chronic disease needs to be measured to help clinicians and policy makers. Although clinicians are focused on physiologic measures, those measures are of limited interest to patients who are more concerned with functional capacity and well-being. Physicians need to be aware that patients value aspects of life that are not generally considered as “health.” Patients value income; freedom; physical, mental, and social well-being; employment; economic status; and spirituality.26,27

Physician Beneficence and Doing No Harm to Patients

Paternalistic decision making by physicians is common in an emergency when the unconscious patient’s consent to treatment is implied. Physicians are assumed to act in the best interests of the patient due to their adherence to ethical principles of beneficence and nonmaleficence. Because of superior knowledge and experience, physicians exercise great power over the patient’s right of self-determination. However, physicians’ (and nurses’) appreciation of patients’ future quality of life proves to be unreliable, matching our inabilities to predict survival of very sick patients. Therefore, many physicians are reluctant to prognosticate a patient’s chances of survival, even in the face of overwhelming death rates, because of those very small numbers of survivors, the apparent miracles, and the fact that each human being is unique.

Ideally, involving family members with trauma physicians in a shared decision-making model has been recommended in end-of-life issues.28 A national telephone survey of the general public and trauma health care professionals on end-of-life care when a life-threatening or fatal injury loomed showed concordance between the groups. When physicians believe there is no hope of recovery for a patient, 72.8 percent of the public agreed with 92.6 percent professionals that life-sustaining treatments should be stopped and the focus of care should be on comfort. Both groups preferred to die rather than continue receiving life-sustaining care if they were in a persistent vegetative state.

How do surrogate decision makers act on behalf of critically ill patients who cannot express their own wishes? At an academic medical center, semistructured interviews with 179 surrogates for 142 incapacitated patients who were at high risk of death showed that 87 percent of the surrogates wanted physicians to discuss an uncertain prognosis with them. Five reasons were deduced from the surrogates’ beliefs: (1) uncertainty was inevitable because of the individual patient’s character, the disease process, or the will of God; (2) physicians’ medical knowledge and expertise made them a valuable source of prognostic information; (3) information, albeit uncertain, allowed families to prepare for possible bereavement while hoping for the best; (4) the estimates helped families to make decisions; and (5) communication of information by a physician who was honest about the uncertainty actually fostered more trust from the surrogates. Ultimately, surrogates use diverse forms of knowledge, much of which is unknown to the physicians, when estimating the survival chances of their loved ones.

This type of communication is impossible in the heat of the battle, as it was for my patient’s life in the O.R. during the massive-transfusion protocol. However, during the ICU admission, were any surrogates allowed to speak on behalf of this man? The scientific data seem to indicate that once resuscitation has progressed for more than 15 minutes with no immediate reversible cause, a good outcome is very unlikely. Longer resuscitation attempts cannot be justified and should be terminated.

At no point did I hear from the surgeons about the family’s input or even if there was a family.

Justly Distributing Trauma Care

The EDs across our nation are in crisis mode trying to handle the overwhelming use of facilities. Trauma is the third- or fourth-leading cause of death in the United States. Thus, it is important to identify those patients who have a chance of surviving their traumatic injuries so that limited resources can be applied for maximal benefit. What ethical principle should be followed to allocate the distribution of life-support services?

Public health ethics differs from clinical ethics by giving priority to the common good. Suppose that a teenager becomes involved in a car accident while texting. The blood bank is short on blood products because of my middle-aged patient. Should the teenager take the chance of being critically anemic and dying? Even supposing that my patient had wanted to be saved at all costs, physicians must be mindful of the utilitarian goal of looking after the health of all members of society, including a teenager using poor judgment.
Which principle should I follow in the presence of precious but scarce blood products? If I try to save the most lives using the prognosis for short-term survival, my patient should not have been allocated the amount of resources he received. Using the principle of saving the most life-years based on long-term survival, he would have lost out again. Under the life cycle principle where those who have had the least chance to live through life’s stages are prioritized, my middle-aged, morbidly obese patient would be viewed as taking life away from a more-salvageable, more-likely-to-live-longer teenager who will contribute to society.\textsuperscript{32}

Military trauma surgeons especially understand distributive justice of care. A morbidly obese, middle-aged patient does not resemble the physically toned young soldiers whose bodies can sustain massive injuries and still survive. Yet, military trauma surgeons make hard decisions about saving lives under austere settings. From a chapter entitled “Expectant and end of life care in a combat zone” in \textit{Front Line Surgery: A Practical Approach}, Rush and Mart\textsuperscript{i}n\textsuperscript{34} serve up some gritty advice: “If you have a scarce resource that could save multiple lives, do not waste it on a heroic but low probability attempt to save one life.” They recommend “expectant” care, which is palliative care consisting of comfort, compassion, and dignity, particularly in severe head trauma and burns over greater than 50 percent body surface area.

Physicians and the public want miracles in the face of tragedies.\textsuperscript{29} I have been a part of one medical miracle: a plumpish 60-year-old woman survived an iatrogenic hole in the inferior vena cava while undergoing removal of an adrenal mass. She also received more than 300 units of blood products. The anesthesiologists used one-handed chest compressions to circulate the CPR medications, while four surgeons from general, vascular, and cardiothoracic surgical specialties feverishly worked to stop the bleeding. One month later, this woman was mentally lucid and very much alive for transfer to a long-term rehabilitative facility. This woman exemplifies the theory that if one is going to survive a cardiac arrest, it is likely a perioperative event, which has one in three patients surviving to hospital discharge and good neurologic outcome occurring in two of three survivors.\textsuperscript{35} This miracle rarely applies to patients with blunt trauma who receive out-of-hospital CPR.

### Lessons Learned from a Futile Massive Resuscitation Attempt

Even seasoned trauma anesthesiologists need to reflect, in retrospect, on the value of massive resuscitations that started and ended as futile. Perhaps some anesthesiologists remain detached, not asking why, just using blood products and tuning, optimizing, and making the numbers look good. However, we must ask ourselves: Are we helping or harming the patient?

We should engage in dialogue with trauma surgeons so we have a mutual understanding of TOR protocols to ensure that our goals are mutual: potentially salvageable patients should undergo a trial of massive transfusions and resuscitations in the O.R.; those who are becoming neurologically or physiologically dead should not. Following the national protocol promulgated by NAEMSP and ACS-COT would help minimize the number of patients who die within the first 24 hours after massive resuscitations. The hospital’s resources of ACLS medications, blood products, and labor must be distributed among other patients who require necessary surgeries.

Communication is key. Sadly, an article from Barbados cited similar issues as found in the United States: no active discussions among the surgeon, the anesthesiologist, or the patient’s relatives as a group concerning futile intensive therapy in moribund patients.\textsuperscript{36} Physicians should clearly communicate with one another as to the reasons why moribund patients are brought out of the ED to the O.R.. Are we keeping patients physiologically alive for organ donations, or are we implementing massive resuscitations because patients will actually survive to have some quality of life that is meaningful to them? The harsh reality is that some trauma surgeons think a beating heart generating blood pressures is a saved patient. Some anesthesiologists will not, or are not allowed to, express their medical opinions on patient prognoses. Family members, especially those of lower socioeconomic or educational levels, when told by physicians that their loved one needs some procedure, would not question the eminent physicians.

Ultimately, the unpleasant task of pronouncing death falls upon the physician. When the trauma surgeon will not, should the anesthesiologist? When our abilities as physicians have proven useless to a dying patient, we need time to stop and quietly mourn the last moments of that human being’s life. Let us show compassion for our patient by injecting amnestic and opioid medications when blood pressures permit to ensure that dying entails no suffering nor physical pain. Let us transition from an impossible attempt to cure to one of comfort, from restorative to palliative care.\textsuperscript{37}

We have other tasks besides dwelling on the futility of our actions. We as physicians must reflect whether we could have improved our resuscitative techniques. Time must also be spent comforting the patient’s living relatives. Guidelines from NAEMSP and ACS-COT advocate for support services for the patient’s family along with appropriate management of the patient who dies outside the hospital.\textsuperscript{9} Studies of families of patients in the ICU indicate that families have reduced psychological morbidity when clinicians listen and value their input during family conferences and support their emotions.\textsuperscript{31}

My patient should have died peacefully, surrounded by his loved ones, not with a hole in his heart from a squeezing fist inside his chest in yet another round of futile resuscitation.
“I’m Too Tired to Care”: The Ethics of Fatigue
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Irvine, California
Let every man be master of his time.
– William Shakespeare, Macbeth

Introduction
In 1984, an 18-year-old college student, Libby Zion, died in a New York City hospital shortly after being admitted through the emergency department in the middle of the night. When the second-year resident and the first-year intern admitted her, she was thrashing and had a temperature of 39.7 degrees C. The junior resident made the diagnosis of “viral syndrome with hysterical symptoms.” A short time later, the intern prescribed an intramuscular injection of meperidine. Libby Zion died four hours later. During the entire time she was in the hospital, she was never seen or examined by an attending physician. Libby’s father, an attorney and a writer, wrote an op-ed piece in The New York Times asserting that his daughter died, in part, because she had received care from overworked and under-supervised medical trainees. The New York City district attorney referred the case to a grand jury to investigate her death. The grand jury declined to indict the two residents for murder, but they did identify 38 counts of gross negligence attributable to the residents’ fatigue.

The long working hours of physicians are a tradition in the medical profession. Since the time of William Osler, medical trainees have endured grueling days and sleepless nights working in hospitals to learn the art of medicine from their suffering patients and knowledgeable professors. In the days of William Osler, the medical trainees usually were unmarried, lived at the hospital, and accepted the long hours spent in the care and treatment of patients as dues paid for excellent medical training.

In recent years, however, evidence has been mounting about the detrimental effects of fatigue and the potential for harm to patients by sleep-deprived physicians. Although much of the attention and research has focused on the fatigue of medical trainees (i.e., interns and residents), many attending physicians work long hours and are equally at risk for experiencing the detrimental effects of fatigue. The fact that many clinical anesthesiologists at all levels are at high risk for fatigue has important ethical implications for the care and treatment of patients.

This chapter reviews the science of sleep and explains why we all need a sufficient amount of sleep in order to function properly. This chapter will then explain the important steps the medical profession has taken to allow medical trainees get enough sleep and will reference studies that support the need for additional measures. Finally, it will examine the ethical principles that support the medical profession’s duty to ensure that all physicians work in an environment that not only allows for sufficient sleep but also encourages sleep as a part of a competent medical practice.

The Science of Sleep Deprivation

Neurobiology of Sleep
The debate over the amount of daily sleep modern humans need is long-standing. It is well-known that sleep cannot be completely eliminated without important neurobiological consequences, but less is known about the range of detrimental effects produced by ongoing chronically reduced sleep during a typical workweek, work month, or even longer periods. Many laypersons believe it is possible to acclimatize to chronic sleep deprivation, but studies show that any sustained period of wakefulness, whether the result of continuous wakefulness or chronic sleep restriction, results in a decline of neurocognitive function and vigilance.

The purpose of sleep remains a mystery. Currently, researchers believe two processes drive the need for sleep: one is the body’s homeostatic mechanism and the other is the circadian rhythm of sleep. Although the exact neuroanatomic pathway for the homeostatic drive remains to be elucidated, it appears to be restorative to the brain. Like other homeostatic measures in the body, the pressure for sleep increases with the amount of time spent awake. The quantity of sleep required to restore the body to full wakefulness after a period of sleeplessness seems to be proportional to the amount of the sleep deficit. Extended periods of sleeplessness will disrupt the body’s homeostatic mechanism and severely limit the body and the brain’s ability to perform optimally.

The other contributor to the body’s drive to sleep is the body’s internal clock, the circadian pacemaker. The pacemaker, which promotes wakefulness during the day and sleep at night, is located in the hypothalamus and keeps the body on a 24-hour sleep/wake cycle. This rhythm allows the body to have sustained performance and alertness during the day with consolidation of the body’s need for sleep at night. The circadian rhythm can be briefly altered by travel or during periods of stress, but, eventually, the circadian rhythm re-exerts itself to drive the body toward wakefulness during the day and sleep at night. Sustained wakefulness during an adverse circadian phase, such as working the night-shift, causes substantial deterioration in mental performance and increased levels of C-reactive protein, a predictor of cardiovascular risk.

Over time, chronic sleep deprivation can lead to cardiovascular disease, endocrine disturbances, and an elevated risk of cancer.

Physiology of Sleep Deprivation
The degree of sleepiness can be qualitatively measured by asking the subject how sleepy he or she currently feels (Stanford Sleepiness Scale) or how sleepy he or she has felt over the past month (Epworth Sleepiness Scale Score). Quantitative measures of sleepiness also exist. Neurocognitive testing can be used to measure the decrement in cognitive function caused by fatigue, and electroencephalography can be used to measure sleep that occurs during daytime nap opportunities.

Acute sleep deprivation is most commonly seen in residents and attending physicians who take overnight call that involves 24 hours or more. The mere status of being on call disturbs sleep, even when the residents and attending physicians are not called. Acute sleep deprivation causes a decline in cognitive function, self-assessment ability, quality of decision making, clinical
Mitigating the effects of sleep deprivation is complicated by the body's homeostatic and circadian mechanisms such that a physician on a night-float week who is woken up in the middle of night for a case is at very high risk for clinical errors. The physician will be suffering from acute sleep inertia which can impair performance for a short time after waking but might take hours to dissipate completely. Sleep inertia is worse when the subject is awakened during an adverse portion of the circadian phase, and the magnitude of sleep inertia can be quite profound, with the acute effects akin to up to 26 hours of continuous sleep deprivation.

The three physiologic processes work synergistically with the body's homeostatic and circadian mechanisms such that a physician on a night-float week is woken up in the middle of night for a case is at very high risk for clinical errors. The physician will be suffering from acute sleep loss compounded by chronic partial sleep deprivation as well as sleep inertia during a time that his or her circadian pacemaker is at its nadir.

Mitigating the Effects of Sleep Deprivation

Mitigating the effects of sleep deprivation is complicated by the substantial variation among individuals in their susceptibility to cognitive impairment. Inherent factors such as age, gender, and genetics play a role in the extent of cognitive impairment, but other modifiable factors, such as motivation and training, might also influence the degree of cognitive dysfunction.

Napping for as little as 30 minutes during a night-float shift can result in substantial benefits to cognitive performance and diminish subjective feelings of fatigue. Naps of up to one hour may restore some aspects of cognitive performance. Other functions, such as error monitoring, appear to be unaffected by naps, and sleep inertia can still impair performance for a short time after waking up from the nap. A study of emergency department physicians who took 40-minute naps during their on-call night shifts showed memory impairment immediately after awakening, but the nap did improve their subsequent attention and driving performance.

Shift-pattern manipulation is the primary method by which medical trainee fatigue has been addressed. The Accreditation Council for Graduate Medical Education (ACGME) now mandates a rest period of eight hours for all interns working extended shifts, with maximum shift lengths of 16 hours. Currently, there are no restrictions on the number of hours attending anesthesiologists may work.

Cognitive enhancers have been suggested as a remedy in those instances when it is not possible to obtain the sleep needed to function maximally. Substances such as caffeine and modafinil have been shown to improve some aspects of neurocognitive function during periods of acute sleep deprivation and fatigue. The most widely used substance is caffeine. The amount of caffeine in a cup of coffee varies greatly—the median amount is generally about 140 mg. Caffeine produces a subjective feeling of alertness and helps to sustain extended wakefulness. In a study of novices learning laparoscopic procedures, 150 mg of caffeine reversed some of the neurocognitive effects of sleep deprivation. Higher doses, in the range of 600 mg, appear to be needed, however, to have any sustained improvements in cognitive function. Modafinil has received a great deal of attention as a wakefulness promoter and cognitive enhancer during periods of sleep deprivation. Modafinil ameliorates the cognitive decline caused by sleep deprivation; improves attention, working memory, and cognitive flexibility; and diminishes the subjective sense of fatigue.

Physician Duty Hours During Training Duty Hours Before 2003

The most difficult time for medical trainees comes shortly after medical school when newly minted physicians enter into internships or transition into residencies. During this period, these young physicians are expected to devote all of their time to learning the art and science of medicine. They are challenged by difficult cases, long hours, regular nights on call, and ever-increasing levels of responsibility.

No federal laws existed before 2003 to regulate the number of hours worked by interns and residents. Nothing limited the frequency of call, duration of shifts, or total number of hours these trainees could be required to work. Many in the medical profession defended the arduous training as a time for intensive learning and true dedication to patients. They credited learning to the long hours of work on the wards and clinics when trainees juggled all of the demands made on them, efficiently worked to get the paperwork done, and spent extended periods of time in the active care of their patients.

Studies showed that internship and residency, which left very little time for leisure activities, was accompanied by a high rate of depression and burnout. Many physician leaders believed shorter working hours would detract from the intense learning experience and hinder the training physician's professional development. Shorter hours for trainees, they argued, would denigrate the profession by turning medicine from a professional apprenticeship into something akin to factory shift work in which the residents would put in their requisite number of hours and then leave without any sense of dedication or commitment to their patients. Furthermore, reduced work hours would increase both the number of patient handoffs and the frequency of medical errors.
In response to the early literature on the effects of sleep deprivation, many residency programs in the United States voluntarily reduced in-house call for interns and residents from every-other-night call to every-third-night or every-fourth-night call, but residents continued to work, in most cases, in excess of 100 hours per week.

The European nations were the first to limit duty hours. Relying on available evidence at the time that showed the deleterious effects of fatigue on work performance, the European nations ratified the European Working Time Directive, which limited all workers, not just those in the medical profession, to a 48-hour workweek with a maximum of 13 consecutive hours and all time spent at work counting toward this total time limit.

2003 ACGME Guidelines

The promulgation of the work-hour standards by the ACGME in 2003 marked the first time that work hours for physicians in training were regulated throughout the United States. The new ACGME work-hour restrictions were a response to mounting public pressure to reduce the mishaps that were attributable to physician fatigue. The state of New York had already implemented restrictions on resident duty hours after the Libby Zion debacle. Then, in 1999, the Institute of Medicine (IOM) produced its landmark report, To Err is Human, which identified resident fatigue as the primary cause of numerous medical errors. Finally, the specter of federal government intervention spurred the ACGME to action. The ACGME limited residents in all specialties to an 80-hour workweek averaged across four weeks with a maximum of 30 continuous hours, of which only 24 hours could be spent admitting patients, and no more than every-third-night call on average. Further, the residents were required to have 10 hours of rest after each long shift and at least one day off per week averaged over four weeks. Any internal moonlighting was included as part of the total number of hours worked.

After the duty-hour restrictions were implemented for residents, multiple studies failed to show any significant effect of the work-hour restrictions on patient mortality, resident teaching, or resident attrition, but studies did show that interns who worked on a 16-hour schedule reported fewer clinical errors and patient safety existed. In its report, published in 2008, the IOM provided a thorough review of the literature that examined whether a relationship between resident work hours and patient safety existed.

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2011 ACGME Guidelines

Two years later, the ACGME set up a task force to reevaluate its 2003 duty-hour standards and propose a new set of standards. These new standards were released to the public in June 2010, and they went into effect in July 2011. The ACGME retained many of the 2003 work-hour limitations, including the 80-hour workweek and the maximum frequency of call (every third night), but it eliminated the 30-hour call shift and added 16-hour work-hour limits for interns, 28-hour limits for residents (including time for handoffs and educational activities), and greater supervision requirements. The number of night floats per rotation was also limited, and strategic napping was encouraged for residents. The ACGME, however, did not adopt the IOM recommendation that residents be allowed a mandatory five-hour nap during the longer shifts.

To comply with the 16-hour shift schedule currently required by the ACGME, residency programs, by necessity, needed to implement a night-float system to provide coverage for the remainder of the 24-hour day. Studies have shown, however, that a single night-float shift causes fragmented sleep, decreased overall sleep, and fatigue. Residents generally do not acclimatize to the night-float hours, so multiple consecutive night-float shifts cause even more sleep loss, a greater accumulation of sleep deficit, and even greater fatigue. The IOM report did recommend fewer consecutive night shifts, but the ACGME chose instead to impose an upper limit of six consecutive nights.

Interestingly, Kamine et al. found that interns on the surgery service who had been switched from an every-fourth-night call schedule to one that met the ACGME requirements were more likely to be abnormally fatigued as measured by their Epworth Sleepiness Scale scores than were interns who remained on the every-fourth-night schedule. Interns on the new ACGME-compliant schedule, moreover, had similar degrees of fatigue as those of residents who were studied before implementation of the 80-hour work week. These data suggest that the 16-hour shift limitation imposed by the ACGME in 2011 might, paradoxically, result in greater physician fatigue than did the 30-hour call-shift limitation imposed in 2003 and fatigue on par with that experienced by residents before any duty-hour limitations.

The current duty-hour standards are an evolution from the traditional on-call model that had been practiced in many hospitals since William Osler first introduced it in the 19th century. Despite incremental improvements in the duty-hour system, the literature indicates that a new and better work-hour system has yet to be developed. Volpp and Landrigan have suggested applying the lean production principles pioneered by Toyota to develop an evidence-based staffing schedule that allows for the continuity of patient care while addressing the vexing problem of sleep deprivation, circadian misalignment, and fatigue.
Fatigue and the Attending Anesthesiologist

Attending Staff Are at High Risk for Fatigue

Interns and residents are not the only physicians at risk for fatigue. Since the advent of the ACGME duty-hour restrictions for medical trainees, most clinical anesthesiologists who work with residents have been faced with longer working hours that are directly attributable to resident duty-hour restrictions. The 2011 ACGME guidelines placed restrictions on the number of hours an intern or resident could work but did not address the resulting hospital workforce shortage or the increased workload placed on the attending staff to compensate for the fewer hours worked by trainees.

Although the duties of attending anesthesiologists vary somewhat from institution to institution, attending anesthesiologists who supervise residents must be immediately available for all of the important aspects of a patient’s anesthetic. They can use this time, however, for resident teaching and other scholarly activities. When residents are not available to perform cases under their direct supervision, the attending staff members often must deliver the anesthetics themselves. For many academic anesthesiologists, these additional hours spent directly delivering anesthesia in the operating room are added to the already heavy academic load of didactic teaching, research, and other service responsibilities. Because no federally mandated work-hour restrictions for attending anesthesiologists exist, the reduction in resident duty hours has resulted in additional work hours for the clinical attending staff.

In a survey by Roshetsky, the attending physicians at the University of Chicago Pritzker School of Medicine reported a greater workload and decreased time for teaching since implementing the 2003 ACGME resident duty-hour restrictions, which suggests that the increased time physicians are spending providing direct patient care has resulted in less time for attending physicians to participate in clinical supervision and resident teaching.

Age-Related Changes for Fatigue

The effect of age on an attending physician’s susceptibility to fatigue-related medical errors has not been fully studied, and the results appear mixed. Attending physicians, who are generally older than their intern and resident counterparts, are more likely to experience age-related changes in their sleep patterns. These include decreased length of sleep, decreased quality of restorative sleep, more insomnia, a greater pressure to sleep when tired, and a higher incidence of sleep disorders. The older attending physicians, therefore, are considered more vulnerable to neurocognitive dysfunction when deprived of sleep. Rothschild et al. found that attending obstetricians and surgeons experienced more complications when they had less than six hours of sleep on call the night before a morning procedure.

On the other hand, lapses in attention and vigilance failures at inopportune moments appear to decline with age. Experience might play a role in protecting the more-experienced anesthesiologists from errors. Even when sleep deprived, clinically experienced anesthesiologists might be better at detecting errors before these errors progress to do harm. These characteristics of older attending anesthesiologists might provide some protection from the otherwise deleterious effects of sleep deprivation. Certainly, more studies are needed to understand the risks to patients when older attending anesthesiologists are impaired by fatigue.

Need for Limits on Attending Hours

Allowing attending physicians’ workloads to increase unchecked will inevitably lead to greater medical errors and faculty burnout. As the resident duty hours have decreased with the ACGME requirements, the risk of fatigue and burnout among the attending staff has increased. The greater workload placed on attending faculty threatens academic productivity by providing less time for teaching, clinical supervision, academic research, and university service. As residency programs respond to the reduction in resident duty hours, greater attention needs to be paid to attending physicians’ workload and well-being.

Ethical and Legal Responsibilities

Principles of Medical Professionalism

In 2000, three major international medical organizations set out to develop “a set of principles to which all medical professionals can and should aspire.” The product of this collaboration, called The Charter on Medical Professionalism, identifies three fundamental principles that are operative in the practice of medicine: (1) the primacy of patient welfare, (2) the principle of patient autonomy, and (3) the principle of social justice.

Primacy of Patient Welfare

The primacy of patient welfare is the ethical precept that requires physicians to dedicate themselves to serving the best interests of their patients. This precept has two parts to serving the best interests of patients: avoiding harm and doing good.

Avoiding harm to the patient, or nonmaleficence, is a fundamental ethical duty that dates back to ancient time. The Hippocratic Oath, often recited in various forms by graduating medical students, is the pledge not to intentionally or negligently inflict unnecessary harm on patients. In considering this ethical obligation, physicians who treat patients while functionally impaired by fatigue would clearly be in danger of violating this principle.

Studies have shown that sleep deprivation causes decreased neurocognitive function, decreased vigilance, and increased fatigue, which can result in medical errors. To date, however, there is not enough detailed scientific evidence to link specific functional impairments caused by fatigue to patient harm. How an individual or team responds to the lack of sleep, as measured by degree of neurocognitive dysfunction, is highly variable, and, without more research, it would be premature to deem the treatment of patients while fatigued to be categorically unethical.
Recently, some commentators have argued that physicians might have a moral duty to use pharmacologic interventions, such as caffeine or modafinil, to reduce the possibility of harming patients while impaired by fatigue. The editors of the Mayo Clinic Proceedings wrote, “What if a legal stimulant that is shown to be safe could be used to improve medical care during periods of fatigue, regardless of the number of hours worked? Would not the more ethical choice be to promote the reduction of errors—First, do no harm?” In the Journal of Surgical Research, the authors stated, “The prospect of fatigued surgeons taking a prescription drug, such as modafinil, to allow them to operate for longer, and possibly to a higher standard, is perhaps not as far-fetched as some may suggest. This drug has already been studied in emergency physicians, when performing non-medical-related tasks at the end of a nightshift.”

One commentator has even gone so far as to suggest that physicians might have a legal duty to use cognitive enhancers. He argues that because fatigue causes cognitive defects that raise the specter of liability if the physician makes an error that would not otherwise have been made by a reasonably prudent practitioner under similar circumstances, then the use of pharmacologic enhancements to reduce errors could be considered by some courts to be a standard of care, particularly when the injured party alleges that the error occurred as a result of fatigue and further argues that the error could have been avoided if the physician had taken a pharmacologic enhancer.

The other part of the principle of the primacy of patient welfare involves beneficence, the ethical imperative to always do good for the patient and act in his or her best interests. Physicians, then, must comport themselves in a manner such that when they are called upon to do so, they are always in a position to place the interests of the patient before their own. Physicians who are rested and take care of themselves by eating and sleeping properly are in a better position to put the best interests of the patient before their own than are physicians who are impaired by fatigue and whose homeostatic drive and circadian rhythm, even against their own best wishes, are driving them to sleep.

**Patient Autonomy**

The principle of patient autonomy has a more recent history. Events such as Nazi experiments on nonconsenting prisoners of war and the Tuskegee syphilis study conducted on patients without informing them of the risks of participation gave rise to the ethical concept that the physician is, in some sense, an adviser to his or her patients and understands that the patients themselves have a right to determine what health care services to receive. This principle requires the physician to deal with his or her patients honestly and allow them to make informed decisions about their medical treatment.

The information the physician needs to divulge for the patient to give informed consent is contextual and depends on the patient’s ability to understand, the patient’s willingness to know, the possibility of harm, and the probability of the intervention’s success. Some commentators have argued that, as part of the informed-consent process, patients have a right to know whether their physicians are fatigued or otherwise impaired by lack of sleep. A recent study of patients showed that 80 percent of those surveyed would want to see a different physician if they knew their physician had been working more than 24 consecutive hours.

The idea of mandatory disclosure of fatigue before a medical procedure, however, raises the specter of the need for mandatory disclosure of other circumstances that might equally impair the physician. Pellegrini argues that part of a physician’s professional judgment includes assessing his or her own clinical capabilities in light of the circumstances. A tired anesthesiologist, for example, could conduct a rather simple anesthetic procedure but should not be willing to perform a complex anesthetic for a liver transplantation or an emergent ascending aortic aneurysm repair. If a physician’s degree of sleep deprivation requires disclosure to patients, he argues, then should not the physician just as equally disclose marital discord, financial concerns, or any other factors that might affect his or her concentration and judgment?

**Social Justice**

The third fundamental principle is that of social justice, a requirement that the medical profession promote a fair distribution of health care resources and work actively to eliminate discrimination in health care. Sleep deprivation and fatigue might violate this principle by creating inequalities in the quality of health care delivered. Patients who are treated by physicians who have had a restless and restorative night of sleep are more likely to receive better and more thoughtful care than patients treated by physicians who are impaired by the deleterious effects of sleep deprivation. Employers, professional organizations, and hospitals are all members of the medical profession. These groups should encourage physicians not to work while sleep deprived and, when they have no choice, encourage them to take steps to mitigate its effects.

**Employer Responsibility**

A hospital or medical center, as a physician’s employer, has both an ethical and a legal duty to protect its employees and patients from harm. Financial considerations have long played important roles in the staffing of residents in hospitals. In exchange for learning, residents spend long hours working at a small wage in the care of patients. Graduating medical students, who vigorously compete for positions in residency programs, understand that the long hours are a condition of employment and that they are not in a position to negotiate for more reasonable hours or to complain when the long hours cause fatigue. They might not be aware, however, that the long hours put them at risk for occupational injury and errors of judgment as a result of fatigue. Thus, it remains the duty of employers (in this case, the hospitals) to manage the risks from fatigue, regardless of any individual’s willingness to work long or extra hours. In one legal case, McDonald’s Corporation was found liable when one of its restaurant employees killed a motorist while driving after working three consecutive shifts. Some programs do offer residents a taxi ride home on those days they feel too tired to drive themselves, but this does little for patients who are being attended to while the resident or attending physician is in a state of fatigue.
Conclusion
Acute and chronic sleep deprivations are powerful agents that put anesthesiologists at risk for serious medical errors. An improved understanding of how lack of sleep leads to failures of both neurocognition and technical skill would be helpful to anesthesiologists, for whom long hours and constant vigilance are commonplace. Until sleep deprivation is better understood, affirmative steps should be taken to protect both the patients and the physicians themselves from the dangers of sleep deprivation. The ACGME has made progress in this area by regulating the duty hours of interns and residents, but the most recent research shows that little progress has been made. The long working hours of attending physicians continues to be unregulated. Hopefully, high-quality research will bring us closer to finding a causal link among sleep loss, fatigue, and clinical performance in a way that will allow us to make duty-hour schedules that will promote rest and alertness and allow patients to receive the best possible care.

Acknowledgment
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Case Scenario 1

When a resident anesthesiologist arrives for work in the morning, she finds that the night-floating attending anesthesiologist, who has been awake all night, is staffing her case. Her daytime attending physician is stuck in traffic, so the night-floating attending physician has been pulled to start the case until the daytime attending physician arrives. The case calls for a subclavian central line and, as the night-floating attending physician inserts the needle, the syringe fills with bright red blood. The resident notices the error but does not say anything. The night-floating attending physician readjusts the needle, tries again, and properly cannulates the subclavian vein. He threads the catheter over the wire without difficulty. As the chest X-ray is ordered, the daytime attending physician arrives to relieve the night-floating attending physician. When the daytime attending physician inquires about the status of the central line, the resident says nothing about the night-floating attending physician’s slip. Does the resident have a duty to report what she saw?

Instructor’s Notes

Staffing operating rooms (O.R.s) is complex and often requires moving residents and attending physicians around to ensure that all of the anesthetizing locations are properly staffed. Sometimes, as in this scenario, the unexpected occurs, and staff members who normally would be heading home need to stay until they can be relieved. Ideally, any person who has been awake all night taking care of patients should be the first to go home. In those instances where such a person cannot be immediately relieved, he or she should be assigned to anesthesia cases that are not mentally challenging and do not require complex procedures. People respond to sleep deprivation with varying degrees of neurocognitive decline. It is important for each person to know and understand his or her limits. Although an inadvertent subclavian arterial cannulation can occur in the absence of fatigue, the probability of clinical errors increase with sleep deprivation. In this case, a subclavian arterial puncture should be part of the sign-out report of the night-floating attending physician, and if the night-floating attending physician fails to report the incident to the daytime attending physician, the resident should speak up to prevent the potential for harm to the patient.
Case Scenario 2
You are a private practice anesthesiologist. It comes to your attention that one of the younger anesthesiologists has made an agreement with an older anesthesiologist to take the older physician’s overnight call whenever he is assigned to take call. As a result of this agreement, the younger anesthesiologist is taking twice the amount of call than anybody else in his group. He normally has the next day off after his own calls but works the entire day after taking the calls for his fellow anesthesiologist. When asked about this arrangement, both the younger and older anesthesiologist reply that it “works for both of us.” Their arrangement has no impact on your practice, but it continues to bother you.

What should you do?

Instructor’s Notes
The problem here is that the younger anesthesiologist, eager for extra income, is willing to work longer and harder than his colleagues. The older anesthesiologist, who has grown children and a healthy retirement fund, no longer wants to punish himself by taking call. The arrangement certainly works for both of them, but the problem is that it is putting patients at risk for harm as a result of the younger anesthesiologist’s acute-on-chronic partial sleep deprivation. Although there are no laws that regulate how often an attending anesthesiologist can take call, most anesthesiologists recognize their limits and understand that their abilities to care for their patients diminish in proportion to the lack of sleep. The severity of neurocognitive decline varies among people, so it is very difficult to categorically restrict a person from working harder because there is insufficient evidence to quantitate the degree of cognitive decline. The arrangement, however, must be addressed in some manner. The younger anesthesiologist’s ability to compensate for such profound acute and chronic sleep loss over weeks and months will certainly make the arrangement unsustainable and put patients in danger of harm. One possible solution is for the entire group to absorb the older anesthesiologist’s call and schedule the younger anesthesiologist in a manner that will allow him to work more but still be able to get sufficient sleep to continue to maintain his work schedule without endangering the welfare of his patients.

Case Scenario 3
You are an attending anesthesiologist. Your resident seems unusually fatigued. On inquiry, the resident tells you that she has several friends who are visiting for a couple of weeks. Each night when she gets home, her friends want to take her out to eat, and it is usually late by the time they return home. She says that she is having a good time, the visit will only last another week or so, and she will get back on a regular schedule at that point.

What should you do?

Instructor’s Notes
Some residents find it difficult to balance their work and social lives, particularly when the long hours leave very little time for other pursuits. This resident is trying to entertain her friends while continuing her rigorous academic training program. Something has to give. The demands of her training program are difficult, and without adequate time for sleep, both she and her patients will suffer. The resident should be counseled. She should be told that her commitment to her patients must come first and that, if this is not possible, she should consider taking some time to get the other parts of her life in order. She should be made to understand clearly that it is untenable to work long hours as a resident and not to use her free time to accumulate the rest and sleep she needs to treat her patients to the best of her ability.

Case Scenario 4
You have been working long hours but feel that you had a very good night of sleep last night. When you come into the hospital your patient, who is scheduled for a laparoscopic cholecystectomy, looks at you and comments that you look unusually tired and asks you to appoint another anesthesiologist to her case.

What should you do?

Instructor’s Notes
We should always act in the best interests of our patients, and if a patient has any doubts about your abilities and you are not able to assure her doubts, then you have an obligation to find another anesthesiologist who is willing to take the case. The principle of autonomy dictates that we provide our patients with the needed information for them to make informed decisions about their health care. At times, this might include divulging the amount of sleep we have had. Although anesthesiologists do not generally have a duty to discuss their sleep habits, if a patient inquires about the amount of sleep you have had in the past day or week, then it is relevant to the patient’s ability to make an informed decision about his or her own health care. By divulging that you have had a very good night’s sleep but, before that, you had been quite sleep deprived, the patient is in a position to decide how to proceed. The patient should not be convinced or coerced in this process. If she decides that she has confidence in you, despite a recent history of sleep deprivation, that is her right. It is an informed decision. If she wishes to have another anesthesiologist instead, that is her right within the constraints of the availability of another anesthesiologist and provided that the O.R. scheduler can accommodate any changes to the schedule. If, however, you are the only anesthesiologist, then the patient will need to make an informed decision about whether to proceed with anesthesia for the surgical procedure.
Case Scenario 5

You are a member of a small group practice. You have been working hard all week long, but because of the unexpected illness of one of your partners, you have now been placed on overnight call. You work all day, but by 7 p.m. you are feeling too fatigued to continue through the night. All of your partners have already gone home, and, not wanting to appear weak, you continue to work through the night. At 3 a.m., you get a call from the emergency department that there is a patient with a ruptured appendix who needs to go to the O.R. immediately. You are able to get the case started, but you realize that you might not be able to keep yourself awake through the end of the procedure.

What should you do?

Instructor’s Notes

The surgeon and the O.R. staff need to be notified of the advanced state of your fatigue so they can keep an eye on you and on the patient. You should immediately call one of your other partners to come in to relieve you. Although this may appear to others as if you are being weak, the safety of the patient is paramount, particularly now that the patient is under general anesthesia. Standing up, walking around, and drinking caffeinated beverages may help get you through the procedure until one of your partners arrives to take over. If no help is forthcoming, you should notify the nursing supervisor and others who control the admission and disposition of patients in the hospital so that cases can be diverted or delayed until somebody who is less fatigued comes in to relieve you.
2015 SYLLABUS ON ETHICS

Perioperative DNR Orders to Limit Resuscitation
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Medical orders are traditionally used to order something for the patient. Do not resuscitate (DNR), sometimes called do not attempt resuscitation (DNAR), orders are unique in that they order that certain interventions not be provided.

History of DNR Orders

Anesthesiologists James Elam and Peter Safar demonstrated the efficacy of opening the airway and providing mouth-to-mouth ventilation in the 1950s. Safar later combined these techniques with chest compressions (which had been observed to provide a pulse by William Kouwenhoven, Guy Knickerbocker, and surgeon James Jude) to form the basis of modern cardiopulmonary resuscitation (CPR).1 By the 1960s, resuscitation of patients was common in hospitals, and it became accepted as standard procedure for patients outside of the hospital by the 1970s. Soon, it was assumed that any patient whose heart stopped would be resuscitated. At the same time, intensive care units (ICUs) became much more common, allowing patients to be kept alive for longer periods of time.

Although many patients were saved who otherwise might have died, many others came to realize that they did not necessarily want to subject themselves to resuscitation and prolonged ventilation, especially as they became older and sicker. As physicians realized that many patients were not benefiting from CPR, they devised various methods to prevent certain patients from being resuscitated, including marking their charts with purple dots as well as so-called “slow codes.” By 1974, the American Medical Association (AMA) recommended that decisions not to resuscitate be documented in patient charts.2

Respect for the patient’s autonomy to refuse unwanted treatment is the basis of DNR orders. Individuals should be able to judge for themselves whether the burdens of being resuscitated outweigh the benefits. If a person decides that this is the case, he or she should be able to refuse resuscitation, even in the operating room (O.R.) environment. The 1970s saw the rapid growth of the modern medical ethics movement, including a growing consensus that patients (or their designated representatives) should be making their own medical decisions rather than the physicians. The year 1976 saw the landmark case of Karen Quinlan, in which the New Jersey Supreme Court decided that a patient’s surrogate could refuse mechanical ventilation.3 In 1983, the President’s Commission for the Study of Ethical Problems in Medicine and Biomedical and Behavioral Research published a report detailing how medical treatments could be ethically withheld,4 and by 1989, withholding treatments that had no hope of success in terminal patients (with patient/surrogate consent) had become commonplace.5 In 1990, Congress passed the Patient Self-Determination Act, which required all hospitals, nursing homes, and hospices to inform patients on admission of their right to accept or refuse medical care and to execute an advance directive.6 Patient autonomy was no longer just a good idea, it was now codified into statutory law.

DNR in the Operating Room

Despite generalized acceptance of a patient’s right to refuse resuscitation in the rest of the hospital, routine acceptance of this practice in O.R. suites has been slow. As late as 1993, a survey of anesthesiologists indicated that 60 percent of them assumed that DNR orders should be suspended during the perioperative period.7 A variety of reasons account for this, including the nature of the practice of anesthesia, the work environment, and other practitioner concerns. Reports and studies continue to show poor communication of DNR status among team members continuing into the 21st century.8,9

<table>
<thead>
<tr>
<th>Figure 1. Sample Informed Consent in Patients With Existing DNR Form</th>
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<tbody>
<tr>
<td>Option 1 Full Resuscitation</td>
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<tr>
<td>Option 2 Limited Resuscitation: Procedure Directed</td>
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<tr>
<td>Option 3 Limited Resuscitation: Goal Directed No. 1</td>
</tr>
<tr>
<td>Option 4 Limited Resuscitation: Goal Directed No. 2</td>
</tr>
</tbody>
</table>

Goal- and procedure-directed options may be combined into one form. This sample form lists four options: full resuscitation, a procedure-directed order, a goal-directed order that seems to have the most common applicability, and a goal-directed order that the patient and caregivers can tailor.
**Reasons to Perioperatively Suspend DNR**

Normal anesthetic care and those procedures that are included in resuscitation certainly have a great deal of overlap. Among these are intubation, providing positive pressure ventilation, and administering vasoactive drugs. Although administering chest compressions and defibrillation are not considered part of normal anesthetic care, their use is not unheard of in being able to swiftly reverse unintended physiologic perturbations in the O.R., which might possibly have been caused by actions taken by the anesthesiologist or surgeon. If DNR orders are suspended for the perioperative period, there is no resulting confusion as to which resuscitative types of procedures may be performed and which are proscribed. The O.R. team can do things in their usual way, which is usually the best thing to do for the patient. Another reason to want to routinely reverse DNR orders for the perioperative period would be that practitioners are reluctant to not reverse the effects of things that they may do in the normal course of practice and do not want to feel guilty that they may have directly caused the death of a patient. Finally, resuscitation in the O.R. is generally much more successful than in the hospital. If patients are made aware of this, they may be more likely to agree to be resuscitated while in the O.R..

**Reasons to Continue DNR to the Operating Room**

Just because people are going to the O.R. does not mean they give up their ability to make decisions for themselves. Many of the same reasons that they wished to make a DNR order in the first place will probably still apply. People often fear getting stuck on a ventilator and dying in a cold, sterile ICU room. Most terminally ill people prefer to die at home or in an inpatient hospice, not in the hospital. Many who are chronically ill, especially if they have been resuscitated in the past, may now view the burden of the pain of chest compressions and electric shocks as highly undesirable. Patients may also fear the distinct possibility of a worsened physiologic state should they survive the resuscitation.

Common procedures that patients with a preexisting DNR order may present for are tracheostomy, indwelling central line access, feeding gastrostomy/jejunostomy, and emergency surgery (e.g., hemorrhage, bowel obstruction, peritonitis). Many of these procedures may be undertaken for palliation and quality of life, and performing them would not change the underlying reasons that a DNR order was originally chosen by the patient.

**Barriers to Ethical Consideration of DNR Orders**

Despite most practitioners’ good intentions, many barriers markedly hinder the clarification of DNR orders in the preoperative period. Chief among these is production pressure. The rapid pace of the O.R. environment allows precious little time to the proper physiologic workup of patients, and no time is routinely set aside for addressing what are considered peripheral issues. Patients who are elderly, are chronically ill, or have cognitive issues are rushed along from floor to O.R. They may be added to the schedule as the day progresses, making a calm discussion of issues in the patient’s room impossible before he or she comes to the O.R. Anesthesiologists who may have had no previous contact with the patient are reluctant to discuss possible death right before the patient is taken to the O.R., and, in any event, nervous patients waiting nearly naked on the stretcher may remember little of any conversation at this point. A general reluctance by others on the surgical team to preoperatively address DNR issues may also hinder their being addressed. Surgeons may consider planned procedures and/or anesthetics to be minor and straightforward, so may not wish to take the time to sit down and have such discussions with the patient. Conversely, in the case of more complex surgeries, surgeons may assume that their preoperative discussions with patients include surgical buy-in, where surgeons assume that they have a contractual relationship to see a patient through an operation and all complications.

**Clarifying the Perioperative DNR Order**

The American Society of Anesthesiologists (ASA), the American College of Surgeons (ACS), the Association of Operating Room Nurses (AORN), and the American Hospital Association (AHA) all recommend required reconsideration of existing DNR orders before proceeding to the O.R. The ASA’s official policy on patients with DNR orders states that “any existing directives to limit the use of resuscitation procedures (that is, do-not-resuscitate orders and/or advance directives) should, when possible, be reviewed with the patient or designated surrogate.” Before going to the O.R., the ACS recommends that “the patient and the physicians who will be responsible for the patient’s care should discuss the new risks and the approach to potential life-threatening problems during the perioperative period. The results of such discussions should be documented in the record.”

The AORN directly incorporates some of the ASA recommendation in their statement, saying “a patient’s rights do not stop at the entrance to the operating or procedure room. Automatically suspending a do-not-resuscitate or allow-natural-death order during surgery undermines a patient’s right to self-determination.”

Patients and their physicians may have a very different outlook on treatment. Physicians are usually focused on immediate results and obtaining a cure, whereas patients may be more focused on their quality of life and the various burdens of treatment that they have to endure. Patients may object to the burden of the resuscitation itself or, more commonly in the O.R. setting, the burden of a lesser quality of life afterward. Specifying a uniform policy to cover perioperative DNR may not be well suited to situations that depend heavily on individual preferences and values.

Various options are available when clarifying orders to limit resuscitation when going to the O.R. (Figure 1). These include suspending the DNR order (i.e., allowing full resuscitation) for the O.R. and a defined postoperative period afterward, instituting a procedure-limited DNR order, or using a goal-directed DNR order. Full suspension of a DNR is sometimes
appropriate, depending on why the patient is undergoing a procedure and how doing so interacts with his or her overall goals. As already mentioned, resuscitation in the O.R. is generally more successful than that occurring in other areas, as many cases result from straightforward surgical- and anesthetic-related causes, patients have intravenous access in place, and practitioners are able to immediately respond.

Procedure-Limited DNR Orders

Patients can retain full control of what resuscitative measures are instituted by using a procedure-limited DNR order. Some procedures may be carried out while a full DNR is still in place, assuming that airway control is not needed for the procedure. In other cases, patients may allow some aspects of resuscitation (such as intubation and potent cardiac medications) while refusing others (such as electrical shocks and chest compressions). In any event, specifying exactly which procedures are allowed and which are not is the least ambiguous approach.

Any provider caring for the patient can quickly check the chart and determine whether specific procedures should be instituted or not.

Goal-Directed DNR Orders

Although specifying which procedures will be permitted allows the patient to retain the greatest control, paradoxically, it might not always be the best way to align what is done on the patient’s behalf with his or her goals of care. Sometimes the best way to ensure that the patient’s goals are achieved is to allow the anesthesiologist and surgeon to use their own judgments as to if, when, and how to resuscitate. After discussion with the patient, a mutually agreed upon plan may allow the patient’s physicians to use their discretion to pursue those elements of resuscitation that may be congruent with a patient’s values and goals of care. Thus, patients may allow resuscitation aimed at reversing problems that are perceived to be easily reversible, yet want clinicians to forgo resuscitation for major catastrophes.21

The greatest strengths of goal-directed DNR orders are that they are flexible enough to reflect what the patient really wants and do not tie the hands of treating physicians in having to follow a strict list of dos and don’ts with regard to resuscitation. On the flip side, though, goal-directed orders place the highest burden on caretakers.22 Physicians taking care of the patient assume the ethical responsibility of implementing or withholding any resuscitation attempts in a way that accurately reflects the goals and values of the patient. All discussions of DNR status, but especially goal-directed modifications (as they are more prone to misinterpretation), must be scrupulously documented in the patient’s chart.

Length of a DNR Modification or Suspension

If a DNR order is modified when going to the O.R., there is no set answer as to how long it should stay modified. What is clear is that the preoperative discussion with the patient should also include an agreement as to how long any modification to the DNR will last. This may be for a set period of time or limited by the achievement/nonachievement of specified goals. The patient’s individual situation and goals will dictate the length of this period. Other factors that will influence this include the nature of the procedure and the expected postoperative course. As many different practitioners take care of a single patient, the time and/or conditions for a DNR order to be reinstated must be specifically spelled out in the patient record.

Modifications of the DNR status for minor procedures, if modified at all, would normally apply only until the patient was stable enough to be discharged from the recovery area. Procedures that are more extensive can be expected to have a higher risk of incurring postoperative intubation and ventilation as well as the possible use of medications to support blood pressure and cardiac function. Although it is not necessary or mandatory for a patient to agree to a suspension or major modification of DNR that extends into the postoperative period for major procedures, it usually follows that if a patient wishes to undergo the burden of an invasive surgery, then he or she would also wish to undergo the burdens that might be associated with an expected postoperative course. On the other hand, patients may sometimes view even major procedures as a limited trial, whereby they wish to let nature take its course if even relatively minor setbacks occur.

These factors need to be explored and clarified during the preoperative discussion with the patient. It should be noted, however, that the patient is not locked into whatever decision he or she preoperatively makes. As conditions change and time moves on, patients are always free to change their minds.

DNR Orders and Patient Safety

Implementing DNR orders (whether modified or not) depends on good communication. The standard method of communication among all those taking care of the patient is via progress notes in the chart. When in-depth discussions of a patient’s goals and values take place, it is important to document these discussions in the patient record. Whether these documents are left in the chronologic order in the progress notes or placed as an addendum to a DNR/goals of care order will depend on local policy and custom. Whatever is done should be consistent and understood by all. Patient safety may be compromised by resuscitating those who did not wish to be resuscitated (i.e., committing assault) or, conversely, not resuscitating patients when an agreement had been reached to resuscitate them (i.e., failure to render indicated care). Clear, institution-wide policies need to exist regarding how DNR orders are placed and modified, where they are stored, and how orders travel with a patient when he or she is off service.
One method that has been instituted in several institutions to attempt to increase communication and reduce errors has been the electronic medical record (EMR). Though EMRs undoubtedly reduce errors caused by illegible handwriting, they may have unintended negative consequences. As institutions transition from a paper record to EMRs, it is important that all personnel caring for patients understand how code status is recorded in the EMR and have access to that chart. Color-coded armbands have also been used to alert caregivers to code status in hospitalized patients. As might be predicted, because no universal coding scheme exists, this system may itself lead to improper communication.

Pediatric DNR Orders

Indications for DNR orders in the pediatric population are similar to those for adults. Resuscitation may be withheld because the pediatric patient is dying, physicians believe resuscitation would provide no measurable good to the patient, and the patient’s surrogate (usually a parent) agrees to this course of action (with the assent of an age-appropriate patient), as long as this is in the best interests of the child. Again, as with adults, required reconsideration of all orders limiting care should include a thorough discussion with the parents and, when appropriate, the patient. Discussion should include the planned treatment, which elements of resuscitation (if any) may be required in the normal course of care for the planned procedure, and a review of the patient’s goals and values that led to the original orders restricting resuscitation.

Once the benefits and potential burdens of resuscitation in the perioperative period have been thoroughly discussed, a mutually agreeable plan can be developed. Certain jurisdictions have specific laws covering withdrawal of care in pediatric patients. One should not assume that the laws are the same for adult and pediatric patients, and legal counsel should be sought appropriately when formulating policies.

Other Directives to Guide Care

An advance directive is nothing more than a written document letting others know how you wish to be cared for when you cannot speak for yourself. DNR orders are one type of advance directive, but there are several other types.

Living wills are documents specifying which type of treatment a presently competent person would want should they become incompetent and have a terminal illness where death is imminent. They were proposed by Luis Kutner in 1969 and may specify personal preferences in such areas as resuscitation, nutrition, and other areas of medical treatment (e.g., antibiotics).

Although advance directives have been criticized for being both too vague and not specific enough for various situations, they are useful in that they give medical practitioners and family members a sense of what the patient values and wishes to have done. Family members find it much easier to make decisions for situations not covered by an advance directive if they already have a sense of what the patient desired. Durable powers of attorney for health care are documents in which people designate a specific person or persons to make decisions on their behalf should they not be able to do so themselves. Broad powers are assigned to the agent to provide consent or refusal for any type of therapy. Specific limitations on the agent’s powers may be written into the document. Presumably, a patient would have had an in-depth conversation with the designated person such that the person has a very good sense of the patient’s value system and desires. An advantage of the durable health care power of attorney is that someone is designated to speak for the patient in all medical situations, whereas living wills cannot by design cover all possible decisions that have to be made. Living wills and durable health care power of attorneys are not mutually exclusive. Indeed, having both in place may make it more likely that one’s wishes are actually carried out.

Although not commonly thought of as a type of advance directive, an organ donor declaration is another way in which competent adults may specify in advance what their preferences are in a specific area. One potential problem with organ donor cards is that they are not enforceable in all jurisdictions, but in many cases may be subject to the consent of surviving next of kin.

The Uniform Health Care Decision Act of 1993 proposed a model law for states to specify who makes health care decisions for the previously competent person, including decisions to withdraw care. The form contained within the act included portions to specify who should speak for the person when they became incompetent (or sooner than that, if specified by the individual), instructions for those making health care decisions for them, instructions for possible donation of bodily parts, and statement of designation of a primary physician or alternative.

In the jurisdictions that allow them, Physician Orders for Life-Sustaining Treatment (POLST) are specific physician’s orders that are to be followed. The POLST program is designed to improve the quality of care that people receive at the end of life. It is based on “effective communication of patient wishes, documentation of medical orders on a brightly colored form and a promise by health care professionals to honor these wishes.” One of the criticisms of living wills is that they are often not allowed in prehospital care or in emergency departments. The thrust of the POLST program is for seriously ill patients’ wishes to be followed in all health care settings.

States (or local communities) that have set up POLST programs agree across settings to honor physician orders that have been mutually agreed upon by the patient. The orders are kept in a prominent place (such as on the patient’s refrigerator) and follow him or her from outpatient to hospital to nursing facility. These programs serve to break down some of the artificial barriers that exist between different facilities and jurisdictions.
Resolving Conflicts

When discussing how a patient’s DNR status will be handled perioperatively, conflicts may arise between the anesthesiologist and the surgeon or between the anesthesiologist and the patient. Remember that because the patient bears the greatest burden from any interventions undertaken (as well as remembering our fiduciary responsibility to the patient), most conflicts of opinion with regard to a DNR order should be resolved in favor of the patient’s preference.

In some instances, for moral reasons, an anesthesiologist may believe he or she cannot provide care in the manner in which the patient or surgeon prefers. As long as the planned procedure is not emergent, then the anesthesiologist should follow the recommendations of the published ASA ethical guidelines, which state, “when an anesthesiologist finds the patient’s or surgeon’s limitations of intervention decisions to be irreconcilable with one’s own moral views, then the anesthesiologist should withdraw in a nonjudgmental fashion, providing an alternative for care in a timely fashion.”

If this cannot be accomplished within a timely fashion, then, in accordance with theAMA Principles of Medical Ethics, care should proceed with reasonable adherence to the patient’s directives, being mindful of the patient’s goals and values.

References

Case Scenarios

DNR Scenario
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Part 1

Your patient is a 25-year-old man with human immuno-deficiency virus who is currently beginning his third bout with pneumocystis carinii pneumonia. He is scheduled for an indwelling central line. He explains that his worst fear is being in the intensive care unit with a breathing tube. In fact, as he says, “I want nothing done that will prolong my life.” You spend several hours with him. He is a genuine, thoughtful, sincere person who appears unaffected by the morphine infusing in his last remaining intravenous site.

1. What obligations should the anesthesiologist consider before having this discussion?
2. Should the surgeon and primary care physician/hospitalist be included in this discussion?
3. What role does the current intravenous morphine play? Are the words “thoughtful, sincere person” critically important?
4. What precise issues should be discussed with the patient?

Part 1: Instructor’s Notes

1. Anesthesiologists need to consider their obligations to the patient, other caregivers, and themselves. The results of these obligations center on the idea of getting the do not resuscitate (DNR) order right. This includes educating the patient, documenting correctly, and communicating correctly. This will minimize confusion.

2. The surgeon and primary care physician/hospitalist must be included in the discussion. If the patient wants a goal-directed order, the attending physicians need to agree, and they need to hear the same thing. Furthermore, other pertinent caregivers should be included: the intensivists and nurses, who may be caring for the patient postoperatively and may need to participate in withdrawing care; the primary care physicians, for both of the aforementioned reasons and for their ability to communicate with the patients; and perhaps family members, so there is no question as to the patient’s wishes.

3. Depends. The participants in the discussion need to assess whether the patient has decision-making capacity. Remember, the morphine may give the patient better decision-making skills because he will not be as distracted by pain.

4. The patient should know what his options are for defining resuscitation in the operating room. Discuss with him the benefits of revoking the DNR order, using a procedure-directed order, and using a goal-directed order. No matter which option he chooses, start by helping him understand and establish his generalized goals:
   - What is his life expectancy?
   - How much burden is he willing to undergo to stay alive?
   - What does he consider an acceptable quality of life?
   - Does he have any events coming up?

   Explain to him the procedure and the types of anesthesia available, along with their respective risks and benefits. Then, the DNR order can be obtained with the appropriate persons present.

Part 2

The patient has decided that he wants monitored anesthesia care and no resuscitation. He wants to use a goal-directed order and declares that resuscitation attempts should occur only if the adverse events are believed to be temporary and reversible in the clinical judgment of the attending anesthesiologists and surgeons. You are happy with that, but the surgeon appears uncomfortable and tries to talk the patient out of it (and into revoking the DNR order). The patient is steadfast in his desire to retain his DNR status. The surgeon pulls you outside and suggests to you that he will not kill his patient and will not expose himself legally. He suggests that the both of you agree with the patient, but in the operating room provide full resuscitation. You discuss with him why it is reasonable to follow the patient’s preferences and retain the DNR order, and the surgeon relents and agrees to the patient’s request.

1. What should you talk about with the surgeon? How can you respond to the proposal?
2. If the surgeon and patient were to make a deal that you cannot abide by, can you withdraw from this patient’s care?
3. Should you tell the patient about the surgeon’s potential duplicity?

Part 2: Instructor’s Notes

1. Initially, respond to the surgeon with sympathy and understanding. Getting into a shouting argument now will not help anyone. Explain the concept of patient autonomy, benefits and burdens, and the right to refuse therapy. Show him the American Society of Anesthesiologists and American College of Surgeons statements that promote reevaluation of the DNR order. If he is legally uncomfortable, suggest that he call hospital counsel for reassurance.

2. If the patient and surgeon were to make a pact that you cannot accept, you may definitely withdraw from that patient’s care if the procedure is not emergent. If the procedure is emergent, weighing the rights of the patient versus the rights and duties of physicians becomes more complicated, but in general, lean toward providing the care the patient requests.

3. This is, by definition, a difficult question with no easy answer. If you believe the surgeon intends to lie to the patient, you are obligated to bring it to someone’s attention, be it someone in administration, the department of surgery, or the department of anesthesiology.
Part 3

During placement of the central line, the patient's heart rhythm goes into ventricular fibrillation. Thinking it is temporary and reversible, you and the surgeon proceed with resuscitative therapy. After several minutes, it is clearly not successful, so you suggest stopping, in accordance with the patient's wishes. The surgeon, who has agreed with the patient and the anesthesiologist as to the conditions of surgery, glares at you and begins CPR.

What will you do?

Part 3: Instructor's Notes

Unfortunately, this can happen whether a procedure- or goal-directed order is used, whether it is the surgeon or the anesthesiologist who breaks rank, and whether the event is truly temporary and reversible. Although the tendency is to become angry and, possibly, self-righteous, I am not sure that this is such a big deal. Consider that it is difficult to allow a patient to die, to give up. Further, consider that many of us will be unable to truly know what we will do when push comes to shove. A little tolerance and understanding is a reasonable approach to this situation.

You could ask the surgeon why he wants to continue:
- Does he still think the patient’s condition is temporary and reversible? or
- Does he have a reason for not adhering to the patient’s directive?

Depending on the surgeon’s response, you can have a discussion about reasons and not about emotion. In my opinion, it is unlikely that you will be successful. If it is a question of whether the event is temporary or reversible, the surgeon may be satisfied with a few more rounds until the outcome is clear. On the other hand, the surgeon might not be satisfied no matter what happens. Keep in mind the goal is to fulfill the patient’s wishes. Bringing him back to the intensive care unit (ICU) for a short time to clarify matters is not wholly inconsistent with his wishes—as long as the team is emotionally and ethically capable of withdrawing care. In other words, the increased certainty of a poor prognosis that a short period of time may bring is probably well worth whatever extra minimal burden it imposes. That is why it is important to bring in the intensivists and primary caregivers for this discussion, so that if and when it is appropriate, care may be withdrawn.

An anesthesiologist’s obligation does not end when dropping the patient off in the ICU. The anesthesiologist’s obligation to the patient is to ensure that the patient’s wishes for operating room care are followed; in this case, the ramifications of that agreement carry over to the ICU.

Case Scenarios

Case Scenario 2
DNR in the Emergency Department
Cephas P. Swamidoss, M.D., and Stanley H. Rosenbaum, M.D.
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You are called to the emergency department (ED) and asked to intubate Mrs. Z, a 75-year-old woman with chronic obstructive pulmonary disease. She is a so-called frequent flyer in the hospital and has been admitted to the ED and ICU on multiple occasions for respiratory care. During her last admission two weeks ago, she required mechanical ventilation for three days. As a result, she signed a do-not-intubate order to prevent having to undergo “that experience” again. The ED physician tells you that you have to intubate her now.

1. How do you respond to your ED colleague?
2. What are your concerns?

Instructor’s Notes

1. The concerns in this case center on patient autonomy. If the decision to forgo future intubation and mechanical ventilation was made by the patient with a clear understanding of the consequences of not intubating her, her wishes should be honored. Another issue that may or may not be relevant to this scenario is the issue of professionalism. Anesthesiologists should not follow a direction to intubate a patient when they believe it is wrong. Now, of course, this refusal needs to be tempered with common sense. If the situation is unclear, an anesthesiologist can always intubate the patient in the urgent situation and withdraw ventilatory therapy after clarifying the situation.

2. In this scenario, the patient’s goals for her medical care, although divergent from those of the physicians, clearly indicate her preferences. Of course, if she is still conscious and has changed her mind, then her (new) autonomous choice must be respected.
Pediatric Do Not Resuscitate Decisions
Saint Louis, Missouri, and Houston, Texas

Introduction
Although clinical cases involving do not resuscitate (DNR) orders with pediatric patients can share many similarities with adult patients who have DNR orders, there are also several differences. This chapter will discuss DNR orders in pediatrics, both in the context of the operating room, as well as in the pediatric intensive care unit (ICU).

Case Scenario
One of your colleagues anesthetized a 6-year-old obese female for a tonsillectomy six weeks ago. In the post-anesthesia care unit (PACU) the patient became agitated, pulled out her intravenous line, vomited and then spit out large amounts of blood. She was rushed back to the operating room where intraosseous access was obtained, but even after several minutes she was unable to be reintubated. A tracheostomy was performed, yet tracheostomy placement was complicated by her body habitus and she suffered what has been diagnosed as a hypoxic brain injury.

Despite aggressive ICU treatment, she has not regained consciousness and her neurological prognosis remains grim. She continues on full ventilator support and requires no sedation. Occasionally, her eyes open spontaneously, but they remain disconjugate. She does not follow commands.

You are taking over her care after six weeks in the ICU, and you believe that it's time to enter a DNR order and then withdraw ventilator support. However, her family insists that everything be done. They are waiting for a miracle.

How would you proceed?

History of Pediatric Cardiopulmonary Resuscitation (CPR)
CPR was first described in the 1950s by Elam and Safar as a method to attempt the resuscitation of people who had experienced witnessed cardiac arrests in the hospital. By the 1960s the practice of CPR became commonplace throughout the hospital, and by the 1970s CPR was being performed by paramedics and ambulance crews on arrest victims outside of the hospital. In 1974, the American Medical Association recommended that decisions not to resuscitate patients be documented in the patients’ charts.1

Over time, the decision regarding resuscitation shifted from the physician unilaterally making the decision to the patient almost exclusively making the decision after considering the physician’s advice. This rapid shift in the adult population regarding who made the decision whether or not to resuscitate the patient was paralleled in pediatrics. The difference in the pediatric patient population from the adult population was that the decision regarding pediatric resuscitation shifted from the physician to the child’s parent(s). This decision regarding resuscitation was made by the parent(s) after considering the physician’s advice regarding the likelihood of a successful resuscitation.

Resuscitation Decisions: Adult and Pediatric Patients
The difference in decision-making for resuscitation between adult and pediatric patients stems from a number of factors: 1) they are physiologically different, and 2) pediatric patients, particularly neonates and infants less than 1 year of age, are treated differently under the law. Physiologically, neonates have relatively less mature lungs than adults, with premature neonates having lungs that are even less mature. In addition, neonatal hearts are much more dependent on the heart rate to maintain an adequate cardiac output. Pediatric cardiac arrests are nearly always respiratory in origin as opposed to adult cardiac arrests, which are nearly always of a cardiac origin. Traditionally, and by the accepted standard of care, resuscitation is not offered or attempted for some distinct pediatric patients. These distinct patients include fetuses born before the age of viability and neonates born with severe lethal congenital anomalies where death is imminently expected with or without resuscitation.2 However, as will be explored below, a strict reading of the federal Born Alive Infant Protection Act (BAIIPA) and the Child Abuse Prevention and Treatment Act (CAPTA) would require that all children under 1 year of age be resuscitated, except under certain strict circumstances. This is further complicated by regional differences in the law covering resuscitation, which will be discussed below.

In the United States, the current prevalent standard of care regarding pediatric resuscitation remains similar to the adult standard. By default, in adult and pediatric patients, resuscitation is attempted absent a specific order prohibiting it except in some distinct pediatric patients as discussed previously. Furthermore, DNR orders are seldom written without the consent of the parent(s) or other designated surrogate. Unilaterally writing a DNR order without consent would require a very stringent ethical justification, and even an ethically justified order may expose the ordering physician to litigation from a disgruntled family. Finally, in certain circumstances outside pressure compels a resuscitation attempt, even when either parent(s) or physician desires none.3 This was exemplified in 1990 when a Texas court ordered that resuscitation be attempted on baby girl Miller, a 614-gram baby with congenital anomalies born at 23 weeks gestation. The court order resulted from a third-party complaint objecting to the antepartum decision of the parents, obstetrician and neonatologist to not attempt resuscitation of baby girl Miller. An appeals court held that no decision regarding resuscitation could be made before birth, yet, following birth, resuscitation becomes a medical emergency not requiring parental consent.

In the delivery room, a neonatology fellow initiated resuscitation, in spite of pleas from Mr. and Mrs. Miller to let their baby go. Baby girl Miller has severe mental and physical disabilities.
Expressed Wishes, Substituted Judgment, and Best Interests Standards

Adult patients are assumed to be competent, barring a specific ruling of incompetence; they have decision-making capacity unless diagnosed otherwise at the time, and they are able to express their own wishes. Furthermore, adult patients have a right to have their wishes honored in situations where they want to limit their medical treatment(s). The ethical and legal concept of autonomy characterizes an American respect for the “individual” rights of liberty, self-determination and privacy. Furthermore, respect for these rights is without concern for the rationale behind or the consequences of the individual’s decision. In 1914, the autonomy principle underlaid the legal right of “informed consent/refusal” when Justice Benjamin Cardozo stated “every human being of adult years and sound mind has a right to determine what shall be done with his own body…”4

In the United States, however, those persons under the age of majority, generally 18 years of age, are not legally permitted to give informed consent for medical procedures or informed refusal of resuscitation or other life-sustaining medical treatment. Prior to achieving an age of majority, some patients may, under specific circumstances, be afforded the legal right to provide informed consent and express their wishes as “emancipated minors.” Persons may be classified as emancipated minors if they are self-reliant and independent. Self-reliance/independence is generally demonstrated by circumstances of marriage, active military service, financial independence, living apart from parents, or obtaining a specific court ruling. Certain specific social situations and medical conditions also result in minors being able to provide consent. Specific conditions that generally afford a minor to consent to their own treatment include suicide prevention counseling, drug/alcohol dependency testing/treatment, sexually transmitted/communicable infection testing/treatment, and pregnancy-related (except abortion) treatment. Of note, in cases involving suicide prevention counseling, drug/alcohol dependency testing/treatment, and/or sexually transmitted/communicable infection testing/treatment, the minor is not awarded a completely emancipated status for all decisions. Instead, the minor can provide consent related only to these specific conditions – a specialized consent status. Some states recognize this as a “mature minor” class in which the minor makes certain specific, but limited, medical decisions based on the risks/harms involved.5

If a competent adult loses decision-making capacity, a surrogate decision-maker provides their informed consent/refusal. The gold standard for a surrogate decision-maker is the patient himself or herself. As such, all states, the District of Columbia and Puerto Rico have enacted some form of advance directive legislation. Advance directives are generally one of three types: 1) a living will in which a competent adult states in advance their treatment preferences 2) a durable power of attorney for health care in which a competent adult identifies, in advance and by name, the individual surrogate to make decisions for himself or herself, and 3) a do not resuscitate (DNR) order. A DNR order is a physician order and is deemed valid even outside the hospital setting.6 The DNR order delineates which resuscitative interventions, if any, may be attempted in accordance with the person’s expressed values, goals and desires. The surrogate decision-maker who speaks for the patient should default to using the “substituted judgment” standard. Substituted judgment involves the surrogate expressing to the caregivers what the patient would want, based on their previously expressed preferences. If the surrogate is unable to provide caregivers with a substituted judgment (what the patient would want based on known preferences), then the surrogate decision-maker would make decisions that are in the patient’s “best interest.” Substituted judgment cannot exist for preadolescent pediatric patients. Preadolescent pediatric patients have neither previously formulated nor expressed opinions on their end of life care. In addition, as minors, they (except emancipated minors and “mature minors”) have never held legal decisional capacity. In pediatrics, the “best interest” standard is accepted as the appropriate ethical and legal guideline to make decisions for children. Under the “best interest” standard, the benefits and burdens of any particular proposed treatment are weighed in relation to the interests of the child, and only those options deemed to be in the child’s best interest should be considered. Thirteen children’s interests have been elucidated by Malek.7

Older Children and Adolescents

As minors mature through adolescence, they develop the psychological, emotional and spiritual ability to establish a consistent value and belief system. In essence, they develop increasing decision-making capacity, even though they may not yet have achieved the legal age of majority. Health care providers are ethically obliged to foster, support and respect this growing competency by obtaining the adolescent’s (and in certain circumstances younger children’s) “informed assent” to provide or withhold treatment(s), even though we are legally required to obtain informed consent from their parent(s) or appointed surrogate. Although obtaining informed assent depends on the level of maturity and amount of experience children possess, typically children age 14 years and older will be able to express their opinions and participate meaningfully in discussions regarding their medical care.

In Cardwell v. Bechtol, the Tennessee Supreme Court referred to the common law “rule of sevens,” stating no capacity exists for children younger than age 7; lack of capacity is assumed between 7 and 14 years but can by rebutted with evidence of capacity; and a rebuttable presumption of capacity exists for those 14 years and older.8
Three problems regarding decision-making capacity have been suggested by Diekema, related to the assumption that adolescent capacity is demonstrated by understanding and reasoning. Diekema notes: 1) “can” does not equal “does”: simple possession of the ability to make adult decisions ignores psychosocial factors interacting with cognitive elements and is therefore incomplete; 2) an ability to use analytic processing does not establish it as the primary decision-making mode; and 3) studies are not conducted in the social and emotional context of real-life medical decision-making. This leaves physicians and parent(s) or the appointed surrogate to make individual determinations on a case-by-case basis considering both the child’s best interest and obtaining the assent to the proposed treatment.

**Shared Decision-Making**

Shared decision-making has been described as a middle ground between paternalism (where the physician unilaterally makes all the medical decisions) and informed choice (where a physician describes a laundry list or menu of options from which a parent is expected to choose). In shared decision-making, the patient (or their surrogate) describes their goals and values, and the physician describes the viable medical options, including the possible consequences of each option. Together, the patient and physician consider how well each of the medical options aligns with the patient’s goals and values. In the case of a pediatric patient who has never been capable of expressing goals and values, the parent(s) or appointed surrogate usually speaks of the family’s values and goals for that child. A discussion between the family and physician takes place in order to develop a mutually agreed upon treatment plan.

In a 1994 Guideline (reaffirmed in 2008), the American Academy of Pediatrics (AAP) advocates for shared decision-making between physicians and parent(s) (or appointed surrogate) for pediatric patients who are not old enough to participate (or capable of participating) in their own shared decision-making. The AAP also advocates that children old enough to participate (generally at least 14 years old) be included in such discussions. Physicians should neither coerce nor merely offer a menu of options to patients and family, but should have a thorough discussion of options with patients and their families. For those times when there is disagreement between the medical team and the parents related to forgoing life sustaining treatments, the AAP recommends letting the parents decide, except when those decisions clearly conflict with the best interests of the child.

**Legal Cases Affecting Pediatric Resuscitation**

Newborns have historically occupied a special place when it comes to legal decisions, especially when it comes to resuscitation and providing other life-sustaining treatment. In 1982, Baby Doe was born in Indiana with esophageal atresia and Down syndrome. The baby’s parents, on advice of the obstetrician, decided not to provide surgical care, which would mean that the baby would die of malnutrition. The family doctor and a pediatrician petitioned the courts to intervene. The original decision was in favor of the parents, and the baby died after six days, before the Supreme Court could hear the case. In a reaction to this case, the federal government directed that a letter be sent to all hospitals and doctors that babies with conditions such as Down syndrome were covered by the Americans with Disabilities Act (ADA) and that care should not be withheld from disabled infants solely on the basis of their disability. Subsequently, letters were posted in delivery rooms and newborn nurseries directing anyone concerned to call “Baby Doe Hotline” numbers that were set up to receive complaints. The Supreme Court ruled against these hotlines, but some basic rules governing treatment of newborns were incorporated by Congress in the 1988 Child Abuse Prevention and Treatment Act (CAPTA).

These rules stated that except under some very circumscribed conditions (the infant was comatose, dying, or the treatment was virtually futile) treatment could not be withheld from infants.

The Born Alive Infant Protection Act (BAIPA), although primarily passed to address how babies who survive abortion are treated, becomes involved in neonatal resuscitation when it interacts with the Emergency Medical Treatment and Labor Act (EMTALA). BAIPA details that any human, after being extracted or expelled at any stage of development from the mother in any fashion, who has a beating heart, pulsating umbilical cord, or voluntary movement of skeletal muscles, is an alive individual. Furthermore, EMTALA requires hospitals to screen and stabilize any patient who presents for emergency treatment. So, in 2005, the federal government issued a letter detailing how EMTALA applied to newborn babies wherever they were born in the hospital (emergency department or elsewhere). The federal government went on to advise their surveyors, “EMTALA is a complaint-driven statute. If you receive a complaint that suggests that a born alive infant has been denied a screening examination, stabilizing treatment, or an appropriate transfer, you should treat that complaint as potentially triggering an EMTALA investigation of the hospital.” Unfortunately, the letter does not offer guidance on appropriate screening or stabilization. However, a strict reading of the letter would seem to indicate that should a heartbeat be present after delivery, then an EMTALA investigation could be initiated upon complaint by any individual regarding newborn non-resuscitation, no matter how premature the newborn. Knowledge of this opinion could covertly or overtly exert pressure upon medical teams to resuscitate babies that they otherwise might not resuscitate, due to fear of prosecution.

Some regional differences in the law exist. In 2003, New York State Attorney General Elliott Spitzer interpreted the state’s law on DNR to say that physicians must provide CPR if the patient (or their surrogate, if applicable) want it provided, even if the physician feels that resuscitation is not medically indicated. In addition to New York State’s law covering adult and pediatric patients, Wisconsin physicians are bound in the treatment of pediatric patients by the Wisconsin Supreme Court’s 2002 decision in Montalvo v. Borkovec, which held that resuscitation was a form of life-sustaining treatment and stated “…in Wisconsin, in the absence of a persistent vegetative
state, the right of a parent to withhold life-sustaining treatment from a child does not exist.” It would appear that the above cases would prevent, or at least impair, parents’ ability to act in the best interests of their children in certain circumstances. The reality, however, is that these laws are seldom enforced.

Improved methods of resuscitation and high-tech ICU care left some individuals feeling that they needed a way to “stop the madness” by having their doctors issue DNR orders for them or for their loved ones. These new technologies also left many medical teams seeking a way to resolve conflicts when families insisted on “doing everything” despite a recognition that the therapies were no longer medically appropriate.

The Texas Advance Directives Act (TADA), enacted by the Texas State Legislature in 1999, outlines a formal process to definitively resolve disputes between physicians and families regarding the appropriateness of instituting, continuing or withdrawing medical therapies. It is designed to resolve these disputes without involving the courts (point #6). Furthermore, it protects all parties from litigation (point #7). Furthermore, it protects all parties from litigation (point #7). The T exas Advance Directives Act (TADA), enacted by the Texas State Legislature in 1999, outlines a formal process to definitively resolve disputes between physicians and families regarding the appropriateness of instituting, continuing or withdrawing medical therapies. It is designed to resolve these disputes without involving the courts (point #6). Furthermore, it protects all parties from litigation (point #7) provided that the process is followed. The following list is a summary of the key elements included in the TADA:

1. The family is given written information on the ethics consultation process.
2. The family is given 48-hour notice and invited to participate in ethics consultation.
3. The family is provided a written report of the ethics consultation findings.
4. If the ethics consultation process fails to resolve the dispute, the hospital must try to arrange transfer to another provider physician and institution willing to provide the disputed treatment.
5. If after 10 days, no transfer can be arranged, the physician may unilaterally withhold or withdraw the “medically inappropriate” treatment.
6. A judicial petition to extend the attempt to transfer period may be granted, but the extension is granted only if there is reasonable likelihood of achieving the transfer, not to review the merits of the designation “medically inappropriate” treatment.
7. The treatment team receives immunity from civil/criminal prosecution, but only if the Act’s procedure is followed.

The TADA process is rarely invoked and even more rarely completed. It does however remain controversial, having been used in a few high-profile cases such as that of Emilio Gonzales. Despite the hype, TADA does provide a useful structure for resolving intractable differences without involving the courts and while protecting the parties from litigation.

**Perioperative Do Not Resuscitate**

A DNR order introduces a somewhat unique problem for the anesthesiologist. The safe provision of anesthesia necessarily involves practices/procedures considered “resuscitation” in other settings, namely supporting cardiorespiratory function. A potential conflict may develop between the patient’s autonomy (informed refusal of cardiorespiratory function support) and the anesthesiologist’s fiduciary duty to beneficence, nonmaleficence and justice (supporting cardiorespiratory function under anesthesia and availing personnel, equipment and facilities to patients who will receive the greatest benefit).

Rather than either automatically continuing or suspending a DNR order, ASA guidelines call for “required reconsideration” of such orders preoperatively by the anesthesiologist, surgeon and patient (surrogate) involved. Two alternatives are recommended for solving the dilemma of how to proceed. One alternative is the patient consenting to a temporary suspension of the DNR, allowing a full attempt at resuscitation under anesthesia. This requires the anesthesiologist and the patient (or surrogate) to agree on a specific time period during which the DNR is suspended. By prior agreement, the DNR suspension may terminate upon exiting the anesthetizing location, discharge from the PACU, or some number of hours (possibly 24 hours or more) after the anesthetic. Another alternative is to temporarily modify the DNR to allow a specifically agreed upon, but limited, attempt at resuscitation. The agreed upon but limited attempt may be defined by specific procedures (endotracheal intubation for a specific period of time, administration of vasoactive medications for a specific period of time, etc.). Conversely, the limited attempt may be defined by the patient’s goals and values. Under the goals and values alternative, the anesthesiologist is empowered by the patient or surrogate to decide in the patient’s best interest, according to the patient’s goals and/or value set, during a specific time period. This time period must be established. It may be while the patient is under the care of the anesthesiologist, or it may extend for a specified time period following the anesthetic. For each of these alternatives, the anesthesiologist is obliged to establish the specific DNR modifications and the time period during which those modifications will be in effect. It is imperative that each of these items be well documented in the patient chart and communicated to the other patient care team members. This is a fiduciary responsibility, meaning that the conversation and agreement to modify a DNR must be between the attending anesthesiologist and the patient (or surrogate); it is not a responsibility that can be delegated to other care team members.

**Discussion**

Cases involving pediatric DNR orders are never simple. The patient’s age magnifies the sadness, and sometimes anger, surrounding the case.

In order to speak in the best interest of the patient, health care providers ideally want the patient (when they are able),
the family and the physician to mutually agree on the patient's best interest and therefore how to proceed with treatment. Similar to adult cases, by the time the question of discussion about changing the code status is brought up, it generally occurs too late for most pediatric patients themselves to weigh in. This is unfortunately true even for those patients old enough to voice and have their own opinion on the situation. Thus, the physician has an uncomfortable conversation with the parent(s) or appointed surrogate. Parents are naturally positioned to clearly speak about the goals and values of the family unit and their child’s role in this family unit.

If this were always the case that processes involving adult DNR decisions proceed similarly to pediatric DNR cases, there would be no need for a separate chapter in this syllabus addressing pediatric resuscitation. Using the same principles, guidelines, and cautions for pediatric patients as for their adult counterparts, the parents (designated surrogate) would decide in conjunction with their child’s physician(s) how to proceed. However, there are laws that apply only to some children nationally, and there are certain specific laws that vary by state that apply to specific pediatric populations.

Fortunately for most physicians, the recommendations of the AAP and ASA are usually followed, and decisions regarding DNR status remain a medical decision mutually agreed upon by the team and the family. Unfortunately, some small amount of unknown legal concerns remains. Becoming knowledgeable of your local laws as well as your hospital’s policies is essential for making decisions regarding resuscitation. When in doubt, consult your hospital’s risk management department and ethics committee.

In contested cases, remember the emotionally charged situation surrounding the possibility of a child’s impending death. Do not expect to reach a conclusion or resolve matters during the first conversation with the family. Human beings need time to process information, and it may take days or weeks for families to “catch up” with the new realities that they’re facing with their loved one. Enlisting the help of family physicians, chaplain services and ethics committees may assist in reaching mutually agreeable solutions.

Administering anesthesia to a patient with a DNR order presents some unique challenges. Ideally, discussions about altering the DNR order would be held with the family and surgeon(s) before the actual day of surgery to assure that everybody involved in the care of the patient is aware of and agrees with the plan of care. When confronted with an add-on case or acute situation, a less than ideal conversation must be rapidly held with the family. Remember that it is the patient and their family that have the most “skin in the game.” They are the ones that have to deal forever with the consequences of the care plan for that day. Thus, they should be given wide berth in deciding how to proceed. If you absolutely cannot in good conscience agree with and adhere to what the patient’s family wants, then you have a fiduciary obligation to find another anesthesiologist who can care for the patient and respect the family’s wishes. However, if transferring this patient’s care to another anesthesiologist is not possible, then your fiduciary responsibility is to administer the anesthetic while honoring as much as possible the family’s wishes.

**Case Resolution**

Coming on service in the ICU, you’re confronted with a dysfunctional situation. Little conversation is occurring between the medical team and the family. The family glares at the team, and the team is distant and aloof with the family. Away from the family, the nurses and residents discuss the patient and voice concern that the persistent care is not beneficial to the patient, may be harming the patient, and may be wasting resources. The charge nurse expresses concern that the nursing staff is experiencing and really suffering from moral distress. Everyone is insisting that you “do something.”

Prior to a scheduled family meeting with the team, you come to a consensus agreement with the care team about both the patient’s current status and the medically appropriate treatment options. The team agrees with you that a change in the patient’s code status should not be pursued at this family meeting. You separately inform the family that during this family meeting, the patient’s present code status and treatment options going forward will be discussed; however, the team will NOT be asking them to make any change in the patient’s code status. The patient’s family appears visibly relieved.

At the family meeting you ask the family to share their values and goals for the patient with the team and to tell the health care team about their child’s life. Then you and the team listen as they tell stories about their child. You then discuss the medical facts of the case, the medically appropriate treatment options going forward and the probable outcomes of these treatment options. You inform the family that the most likely outcome, even if the current ventilation and full support is continued, is weeks (to possibly months) of the same neurologic situation. You also share with them that death will almost certainly be caused by a lung or other infection that is unresponsive to treatment. You empathize with their sadness, but reiterate to them that performing CPR will not improve the outcome. Everything possible is already being done. Chest compressions will likely break or separate ribs, which may cause additional suffering for the patient. After this discussion, you ask the family what questions they have and answer the questions as well as you can.

Two days later, the family approaches you about a DNR order for their child but want to continue both ventilation support as well as any and all other treatments. The hospital risk management group does not want to upset the family any more than they already are. Thus, risk management recommends that you do not “push” the family to withdraw the ventilator support. Two weeks later, the care team is genuinely sad for the family when they agree to withdraw ventilator support.
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Practicing Under Altered Standards of Care
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Our profession, like all professions, has practice standards that have evolved over time and have been shaped by consensus, advances in technology, and law. These standards govern whom we treat and how we treat them. Wherever one goes in America, these standards remain consistent. Certain unexpected events, however, may necessitate that our usual standards of care be temporarily modified.

Altering standards of care is a practice that is to be reserved for disasters and as a temporary short-term accommodation until regular processes can be restored. Such changes almost always occur after a state of emergency has been declared by a public authority. However, one can conceive of a situation where lines of communication have been destroyed and damage is so severe that the management team of an individual facility might have to unilaterally institute an emergency plan without waiting to hear from public authorities.

When Do Standards of Care Need to Be Modified?

It is important to note that altering standards of care is a practice that must be strictly reserved for dealing with natural disasters, accidents, and terrorist attacks. As the ethics of disaster care subjugate the needs of the individual to the needs of the many (and, in the process, trample on individual autonomy rights that are part of U.S. medical tradition and practice), the practices described in this article are not designed or intended for use in day-to-day practice, even if there are perceived or actual shortages of resources (e.g., drugs and other supplies). The ethics of disaster care are not to be used to justify the denial of care in such circumstances. Instead, physicians are charged with working with others to alleviate the underlying causes of these shortages.

On a practical level, the need for altered standards of care exists whenever there is an acute and unforeseen imbalance over a given period of time between the capacity and resources of the medical profession and the needs of survivors who are injured and whose health is threatened. This period may extend from less than a day to several weeks, depending on the nature of the event. As stated earlier, such situations may be triggered by natural disasters (e.g., tornadoes, earthquakes), manmade events (e.g., train derailments, terrorist attacks), or infectious or biologic agents (e.g., flu epidemics, severe acute respiratory syndrome [SARS]). As the ethics of medical care in the military is well-established, this article will limit discussion to events occurring in the civilian sphere.

If there is sufficient capacity to care for all who need assistance, then there is no need for any deviation from the usual standard of care (which typically dictates that the most seriously affected individual is cared for first, no matter how many resources that individual’s care would consume). If the event or incident essentially wipes out the health care system, then any discussion of how to allocate resources is futile. In between those two extremes, systems of allocating resources (usually referred to as triage) are utilized to govern who gets treated and how that treatment is given.¹

A Physician’s Obligation to Serve During a Crisis

Physicians are allowed to practice due to the license granted them by the state. This license grants the physician the privilege of practicing medicine. Not all who wish to practice medicine are given this right, and the state limits such privilege via educational and testing requirements and the enforcement of these requirements. Society also subsidizes medical education through direct payments by the Medicare program to teaching hospitals.

Coupled with privileges extended to the physician by society are certain responsibilities, such as always acting in the patient’s best interest. Another responsibility is that physicians serve the public interest during times of crisis. If physicians had no obligation to serve, then society would have no further responsibility to support physician training and practice.

The American Medical Association’s (AMA’s) Council on Ethical and Judicial Affairs (CEJA) official opinion on disaster response by physicians contains the following:

National, regional, and local responses to epidemics, terrorist attacks, and other disasters require extensive involvement of physicians. Because of their commitment to care for the sick and injured, individual physicians have an obligation to provide urgent medical care during disasters. This ethical obligation holds even in the face of greater than usual risks to their own safety, health or life.²

This obligation on the part of physicians extends to include the following:

Moreover, individual physicians should take appropriate advance measures to ensure their ability to provide medical services at the time of disasters, including the acquisition and maintenance of relevant knowledge.²

Morin et al.³ break down the physician’s obligation to serve during disasters to four factors: degree of need, proximity to the disaster, capability of the physician, and diminished availability of resources. The greater the need during any given time, the greater the obligation of a physician to use his or her talents to assist. Physicians are obligated more strongly toward those disasters that are closer to them, rather than those more distant. Physicians in certain specialties may have a greater responsibility to respond in a disaster than others. Although all physicians might be able to administer vaccines and provide first aid, anesthesiologists (like surgeons, intensivists, and emergency medicine physicians) possess a skill set that makes them uniquely valuable during times of crisis. Finally, when there are fewer resources generally available, such as when one of two hospitals in the town of Joplin, Missouri, was destroyed in a tornado in 2011, then the physicians in the remaining hospital have a greater responsibility to respond.
Despite strong moral and ethical reasons supporting the obligation of a physician to respond during times of disaster, this obligation is not absolute. The AMA code of ethics recognizes that the physician workforce, however, is not an unlimited resource; therefore, when participating in disaster responses, physicians should balance the immediate benefits to individual patients with the ability to care for patients in the future.

Physicians have no ethical obligation to perform supererogatory, or heroic, actions. Many anesthesiologists (and other physicians) have put themselves in mortal danger when serving the public. But this is done despite there being no ethical duty to do so, which is what makes their deeds heroic.

Furthermore, the obligation of a physician to serve must be accompanied by an equally strong obligation of society to protect the physician as much as possible from harm while doing so. This obligation extends to providing vaccines against known pathogens, providing personal protective equipment, and making disaster training available to physicians. Finally, when those who are asked or required to put their lives at risk are harmed during the course of their duties, then there exists a special responsibility for society to attempt to rescue them first. This responsibility is a well-accepted precept in other venues where personnel are put in harm’s way, such as the military, fire departments, and mountain rescue teams.

### Historical Perspective on Triage

The concept of triage in the West originated with Napoleon’s army in the 19th century. Napoleon’s surgeon, Baron Dominique-Jean Larrey, used the concept that the sickest should be treated first, regardless of rank. This rule essentially mirrors the normal triage carried out in emergency departments across the United States. By World War II, the U.S. system of triage had evolved such that soldiers who could be quickly returned to battle were prioritized over those with life-threatening injuries.

Civilian disasters differ somewhat from military-casualty scenarios. Civilian disasters occur infrequently and can be either short-lived and relatively limited (such as the 2011 Joplin, Missouri, tornado) or more widespread with ongoing needs (such as the 2010 Haiti earthquake or the 2002–2003 SARS epidemic).

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**START Algorithm**

![START Algorithm Diagram](image_url)
Common algorithms for civilian triage include START (Simple Triage and Rapid Transport; Figure 1) and SALT (Sort, Assess, Lifesaving Interventions, and Treatment/Transport; Figure 2). Although the START algorithm and variants are commonly cited and used, there is no good evidence that they are the best way of performing triage. When the START algorithm was studied in conjunction with a real disaster, it was shown to have an acceptable level of sensitivity but a large amount of “over triage.”

The SALT algorithm was proposed as a U.S. national algorithm for disaster triage in 2008. This tool, like START, was found to have a significant amount of “over triage,” while also being easy to learn and follow. Despite limitations, these algorithms and variants of them are used worldwide by emergency services in times of scarce resources.

**Ethics of Triage**

Even a cursory examination of the SALT and START disaster protocols reveals differences from normal operating procedures in the ethical principles that are applied. During a time of scarce resources, utility (providing the greatest good for the greatest number of people) becomes a prominent principle (if it’s “more,” then it needs to be “more than some other named principle.”). Individual need is subjugated to the needs of society as a whole. Thus, individuals with needs that might require the utilization of an abundance of available supplies while providing a low chance of survival will not be treated, even though, in normal times, efforts would be made to save them.

Patient and physician autonomy both suffer during a disaster. Patients are assigned care based solely on algorithmic criteria, and physicians provide care using these same protocols. Delaying care for some patients may increase the chance of worse outcomes for those patients. Autonomy is surrendered because of the necessity to use a small amount of resources in the most efficient manner available to treat a large number of casualties.

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**Figure 2. SALT Algorithm**

**SALT Algorithm**

- **Step 1: Sort (global sorting)**
  - Able to walk: Assess 3rd
  - Able to wave or make other purposeful movement: Assess 2nd
  - Lying still or obviously severely injured: Assess 1st

- **Step 2: Assess (individual assessment)**

- **Step 3: Lifesaving intervention**
  - Control major hemorrhage
  - Open airway (if child, consider 2 rescue breaths)
  - Chest decompression
  - Auto-injector antidotes

- **Is patient breathing?**
  - Yes: Obeys commands, Makes purposeful movements, Has peripheral pulse, Not in respiratory distress, Major hemorrhage is controlled
  - No: DEAD

- **All yes**
  - If minor injuries only, Step 4: Treatment/Transport
    - Yes: MINIMAL
    - No: DELAYED

- **Any no**
  - Is the patient likely to survive given current resources?
    - Yes: IMMEDIATE
    - No: EXPECTANT
Part of emergency triage is the function of one or more triage officers, who serve to provide consistent conformity to recognized protocols of triage. When there are not enough resources to treat everyone, it is important for the public to see that the resources that do exist are being deployed in a fair and open manner. Triage officers also serve to relieve individuals who are treating patients from the need to make difficult decisions, such as not to treat a certain patient who would be receiving treatment in normal circumstances. Triage officers must have a number of skills, including medical knowledge, creative thinking ability, knowledge of protocols, decisiveness, knowledge regarding existing resources, and good judgment and leadership.11

Triage in Pandemics and Other Long-Term Disasters

Pandemics share some characteristics with short-term disasters but differ in other ways. In both long- and short-term disasters, a shortage of resources exists in relation to the problem(s) at hand. There might also be some uncertainty as to when normal conditions will return. However, in most short-term disasters, rescuers know with some certainty that in a period of hours or days, many more resources will be brought to bear and conditions approaching normalcy will return. In a long-term disaster, this time frame might stretch to several weeks. Also, rather than having essentially all casualties occur at one time (which typically happens with events such as tornadoes and explosions), casualties continue to occur over a much longer period in long-term disasters. In the case of long-term infectious disasters, there might also be much uncertainty (especially in the first days to weeks) as to how infectious and deadly is the agent involved.

Triage algorithms like START and SALT were designed for dealing with a large number of casualties occurring at the same time, not with ongoing crises such as pandemics. Many unique problems can occur during ongoing pandemics, including panic by members of the public and a surge of patients requiring intensive care far greater than the existing regional capacity. Possible large losses of health care personnel might occur due to illness, child care responsibilities (as schools are closed), or fear of contagion. If regional controls are not instituted, local hospitals may initially attempt to steer highly infectious patients toward other hospitals in order to maintain more profitable business operations (such as elective surgery).

Although intensive care units (ICUs) typically operate with their beds filled nearly to capacity, most institutions have policies in place to accommodate a certain amount of surge in demand. These policies typically include the cancellation and postponement of elective procedures, conversion of other areas into ICU beds, and aggressive discharge of those who do not truly need intensive care. During a severe influenza pandemic, demand for ICU beds may increase by more than 400 percent in the United States, and the demand for ventilators may increase by nearly 200 percent.12

Planners need to consider how to respond to people who are susceptible but not yet exposed to biologic agents, exposed but not yet infectious, infectious, removed due to death or recovery, or protected by vaccination or medication.13 Rationing via triage strategies should not occur outside of a declared emergency. Ideally, at least regional (if not statewide or over a larger region) coordination and shifting of personnel and resources should occur to minimize the negative impact on any given area.

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**Variable** | **0** | **1** | **2** | **3** | **4**
--- | --- | --- | --- | --- | ---
\(\text{PaO}_2/\text{FiO}_2\) mmHg | >400 | ≤400 | ≤300 | ≤200 | ≤100
Platelets, \(x 10^9/\mu\text{L}\) (<150) | >150 (≥150) | ≤150 (≤150) | ≤100 (≤100) | ≤50 (≤50) | ≤20 (<20)

**Figure 3. SOFA Scale**

Bilirubin, mg/dL \((\mu\text{mol/L})\) | <1.2 (<20) | 1.2–1.9 (20–32) | 2.0–5.9 (33–100) | 6.0–11.9 (101–203) | >12 (≥203)

Hypotension | None | M.A.BP<70 mmHg | Dop≤5 | Dop>5 | Dop>15 Epi<0.1 Norepi<0.1 |

Glasgow Coma Score | 15 | 13–14 | 10–12 | 6–9 | <6

Creatinine, mg/dL \((\mu\text{mol/L})\) | <1.2 (<106) | 1.2–1.9 (106-168) | 2.0–3.4 (169-300) | 3.5–4.9 (301-433) | >5 (≥434)

Dopamine [Dop], epinephrine [Epi], norepinephrine [Norepi] doses in \(\mu\text{g/kg/min}\)

SI units in brackets
Canadian and American groups of authors have tackled the problem of how to allocate scarce intensive care resources ethically during pandemics.\textsuperscript{14,15} These groups developed protocols based on the use of exclusion criteria, inclusion criteria, and minimal qualifications for survival (MQS). The purpose of evaluating for MQS was to disqualify those who might ultimately use a sizable amount of resources during a time of rationing. Mandatory reevaluation of patients at 48 and 120 hours would be performed with the goal of removing from intensive care those who were not improving and might not survive. A SOFA (Sequential Organ Failure Assessment) or other scoring system may be used to determine if a person receives and then keeps a ventilator (Figures 3 and 4). All of these criteria are more severe than the usual criteria for admission to intensive care and, taken together, may be seen as a unilateral withdrawal of care/do not resuscitate order imposed by society that, when implemented, is sure to engender protests from patients’ families and perhaps from the public at large.

Especially because most triage protocols have not been validated in actual use, protocols that are used need to be objective, applied in a nondiscriminatory manner, and public (i.e., transparent). Personnel need to be protected not only physiologically but also legally. Many personnel, including anesthesiologists, might be asked to practice in situations outside of their usual scope of practice. As long as they are acting in an emergency situation, they should not be held to the same standard of care that normally exists.\textsuperscript{17} The community should have the ethical and legal responsibility to fully support physicians while they provide care during disaster situations. Authorities also have the ethical responsibility to prepare and respond appropriately and rapidly during disaster situations. Prior public education, contingency planning, evaluation and stockpiling of equipment and supplies, and willingness to implement public health measures to limit spread of disease are all crucial elements in protecting not only those on the front lines of response but also the community in general.

### Conclusion

Anesthesiologists, like all physicians, have a special duty to respond during times of crisis. This duty stems from a reciprocal obligation to the special privileges afforded physicians by the community at large. Although such a duty exists, it is not absolute, and society also possesses a duty to protect physicians who put themselves in harm’s way on society’s behalf.

### References

Case Scenario
You are a 41-year-old married anesthesiologist with two young children. Your hospital has been admitting many influenza patients over the past month. Several have had to be admitted to the intensive care unit (ICU). Two previously healthy people have died, and two more are currently on extracorporeal membrane oxygenation. Your hospital announces that the state has asked it to go on emergency status because leaders are expecting the number of cases to keep increasing. You are told that this will entail canceling all elective surgeries and expanding the number of ICU beds into other areas, such as recovery beds. You are also told that, as an anesthesiologist, you will be expected to help staff these new ICU beds and screening patients in an expanded emergency department area that is being set up.

Your spouse notes that most people getting sick this year are relatively young and previously healthy and would rather you take a leave of absence for eight weeks (the expected time the hospital will be on emergency status).

Can you ethically refuse to take part in your hospital’s plan?

How much risk are you ethically required to take upon yourself (and your family)?

Case Discussion
During crises, physicians might need to expand their practices to areas and procedures outside of their normal routines. Society cannot instantaneously produce more intensivists when ICU beds are significantly expanded, so those whose practices most closely approximates that of the intensivist (like anesthesiologists) would be expected to fill the gaps.

Depending on the employment arrangement with an institution, a physician may or may not have a legal requirement to modify his or her duties, but a lack of legal requirement does not negate the physician’s ethical duty to respond.

As noted, not only do physicians have a general ethical duty to respond in a crisis, but they also have a specific duty as a physician to respond because of their special skills and licensure by the state. An anesthesiologist’s skill set is especially useful during times of crisis. This ethical imperative is not absolute but does extend to physicians exposing themselves to a greater amount of risk to their health and safety than normal.

Concerns regarding risk to oneself as well as one’s family are valid. If there is risk of infection, then society (and by extension, one’s facility) has a responsibility to provide all reasonable means of protection. This includes personal protective equipment and applicable vaccination. A physician’s institution also has a duty to treat the physician should he or she become infected while performing those duties. If there is risk of secondary transmission to one’s family, then alternative housing during the epidemic should be considered. Anesthesiologists are not expected to expose themselves to significant risks of mortal danger. The line between acceptable and unacceptable risk is often not easily discerned, especially in the midst of the crisis.
Teaching Professionalism

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We would all agree that professionalism is core to the practice of medicine. However, throughout the long history of our profession, it has been about 10 years since the Accreditation Council for Graduate Medical Education (ACGME) charged medical educators to include professionalism as a core competency in residency education.1 Bolstering this recent emphasis placed on professionalism as a component of all physician education and practice, many disciplines have created fundamental documents outlining the distinctive fundamentals of professionalism for that specialty.2-4 Still, despite the increasing number of commentaries about professionalism in anesthesiology,5,7 within our discipline there is no such standardized document. If we were to develop such a treatise and include it in the anesthesiology curriculum, it would have pertinent implications. As the practice of anesthesiology continues to grow and diversify, it is not only imperative but mandated that we focus on this issue.

The ACGME mandate means that residents must not only demonstrate professionalism but also understand the implication for performance and conduct. Therefore, residency programs are charged to teach and assess professionalism throughout clinical anesthesia training. Although the ACGME program requirements for anesthesiology are very specific and guide program directors in evaluating components of professionalism,8 it continues to be one of the most intangible competencies to assess. An overwhelming challenge is to define measurable end points that identify professionalism. The tendency has been to describe the competency through observed behaviors within the workplace. Focus has been placed on acceptable acquired behaviors, the absence of which results in a negative evaluation. To meet this challenge, anesthesiology educators must be able to recognize and address the unacceptable behavior as it is a recognized impediment to practice. It is essential that we take this charge seriously.

To fulfill this mandate, we are required to develop a curriculum designed to measure any resulting changes. Currently, it is possible to behaviorally define professionalism in every aspect of a clinical curriculum and measure progress during training. Although these measurements can be used to define progress toward mastery of this competency during residency, the impact of these interventions on professionalism remains to be determined. Therefore, an additional challenge for residency programs is to reach out beyond training, to obtain information about the competency of its graduates, and then adjust the curriculum to improve the outcome. This feedback loop is applicable to all of the competencies, not just professionalism. A natural extension is for competency assessment to become part of the maintenance of certification process. Evidence of professionalism could be required as a part of the process if it were substantively defined and widely accepted.

Some suggest that professional behavior could be divided into four parts: accountability, humanism, ethical behavior, and physician well-being.2 Accountability requires physicians to place the needs of the patient above self-interest. Humanism fosters the physician-patient relationship. Ethical behavior requires physicians to demonstrate the highest level of moral behavior. Physician well-being implies that physicians must be aware of the need for physical and mental health for themselves and colleagues. In contrast, unprofessional conduct can manifest in a variety of ways, including abuse of power, sexual harassment, bullying, inadequate management of private information, dishonesty, conflict of interest, and fraud.

The importance of professionalism is evident throughout the daily tasks of an anesthesiologist. For instance, as a patient is followed through the perioperative period, there are many opportunities to demonstrate professional behavior. Before a procedure, the anesthesiologist has two different responsibilities: collect information essential for good patient care and reassure the patient. The aim is to leave the patient informed, calm, and motivated to cooperate. Intraoperatively, the anesthesiologist is responsible for controlling the environment (e.g., noise, inappropriate conversation). Moreover, an anesthesiologist’s charge is to educate the resident on the skills required to function within a care team. A particular challenge in this profession is managing disruptive behavior of other operating room staff. Obligations continue in the postoperative visit.

The relevance of such programs is emphasized when we consider evidence suggesting that unprofessional behavior exhibited in residency continues into later life. Unprofessional behavior during training seems to predict future performance, as seen in the strong correlation between physicians in practice who were disciplined by state medical boards and reports of unprofessional behavior during medical school.9 Clearly, professionalism education should start in medical school and continue into residency and fellowship. However, if we as a community demand the highest standards of ourselves, then it must form a core component in the lifelong learning experience. Done properly, the yields for both our profession and our patients will be tremendous.

References
Social Media and Online Professionalism in Medicine
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Advent of Social Media in Medicine
An increasing number of physicians, and anesthesiologists in particular, are turning to social media for not just social communication but also networking and professional communication. This trend to use social media is particularly true in medical school and residency programs. Users of social media in the medical community may face new and unforeseen hazards in maintaining medical ethical standards. Physicians may not realize or consider the impact of online unethical behavior; however, the implications can affect not just the physician but also the public, the institution, and our specialty as a whole. Unprofessional behavior on social media sites is relatively common; one survey reports that 60 percent of medical schools have had incidents of students posting unprofessional content online. This included profanity (52 percent of respondents), discriminatory comments (48 percent), pictures of students engaged in drug use (39 percent), and sexually suggestive material (38 percent). Of those incidents, 13 percent involved breaches of patient confidentiality. In one case, physicians who were traveling abroad for a mission trip posted pictures of patients in the operating room and trauma bay as well as pictures of themselves drinking and posing with firearms while in the midst of patients.

Although patient privacy concerns used to be confined to hospital hallways and elevators, now online privacy breaches can reach millions of people within minutes. In an age when patients can find just about anything about their physicians from the Internet, it becomes more important for physicians to safeguard their online profiles and ensure that the content is appropriate. In another survey, only about one-third of social media users have their profiles set to private, and a some accounts/profiles had unprofessional content. Anesthesiologists, and physicians in general, have a special relationship with the public. Because we take care of patients when they are most vulnerable, it is essential to maintain a sense of professionalism and duty.

Development of Policies
Although ethical standards and commitments are already common in medicine, these standards are often difficult to apply to the world of online social media. In addition, because of online archiving, the consequences of violating medical ethics online may have much greater and longer lasting consequences than do similar violations that do not involve the Internet. A greater awareness is needed regarding the maintenance of professionalism online to avoid unethical behavior. Improved awareness can start with educational efforts. Institutions and residency programs may find it helpful to develop guidelines directed toward the use of online social media. Development of these guidelines in collaboration with practicing physicians, residents, and medical students would likely result in the best directives for the ethical use of social media in medicine.

Broad guidelines can address such issues as online physician-patient relationships; online defamation; use of mobile recording devices without patient consent; and online discussion of terms of employment, patient information, or difficult coworkers or cases. Frequent users of social media regard regulation of personal use of these tools as a violation of privacy; however, most believe in preserving a professional standard.

Benefits of Social Media
Although social media users may find new challenges in maintaining medical ethics, the appropriate use of these media can also provide numerous benefits to physicians and patients alike. Sharing of important public health information, professional networking, increased communication with patients, and quality improvement are just some of the benefits of social media. A growing number of hospitals, public health organizations, and medical centers are using online media to communicate and gain feedback from patients. Proactively addressing how social media will be used for these objectives while maintaining ethical standards will help reduce complications in the future.

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Disagreements Over Goals of Care and the Concept of “Futility”

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Adapted with permission from: Luce JM. A history of resolving conflicts over end-of-life care in intensive care units in the United States. Crit Care Med. 2010;38:1623-1629. This adaptation of Dr. Luce’s manuscript has been edited by Michael Nurok, M.B.Ch.B., Ph.D.

The Early Years of the ICU

Intensive care units (ICUs) were created in the United States and other developed countries in the 1950s and 1960s to provide physiologic monitoring and potentially lifesaving medical interventions, such as mechanical ventilation. At the time, biomedical ethics inside and outside of the ICU were dominated by the principles of beneficence, under which physicians, nurses, and other caregivers are expected to benefit patients (including keeping them alive in most situations), and its corollary, nonmaleficence, under which they should “do no harm.”

Most caregivers and medical institutions assumed that ICU interventions were potentially life sustaining and that patients would naturally want them. Reflecting this assumption, and using what might be called a paternalistic model of medical decision making, physicians frequently applied therapies, even in nonemergency situations, without obtaining informed consent from patients and families. Similarly, hospitals required that cardiopulmonary resuscitation (CPR) be performed on all patients, and patients who were started on mechanical ventilation were usually ventilated until their deaths could no longer be forestalled.

Physicians and nurses who performed CPR in the ICU came to realize that it was effective in restoring life in only a small minority of critically ill patients. Furthermore, caregivers encountered patients and families who did not want this treatment if their wishes were sought. Nevertheless, withholding CPR from patients was considered unethical, if not illegal, and it conflicted with hospitals’ universal resuscitation policies. A popular and unethical way of feigning compliance with institutional policies was to resuscitate patients in a delayed or intentionally ineffective fashion. This procedure was called the “slow code.”

One reason that mechanical ventilation was continued in most patients was that the withdrawal of this therapy was regarded as homicide, even if done with the permission of the patient and family. An ethical and legal rationale for withdrawing the ventilator was provided in 1968, when the Ad Hoc Committee at Harvard created criteria for brain death that circumvented the issue of homicide in patients who met these criteria and, after changes in state laws, allowed their organs to be transplanted. Nevertheless, withdrawal of mechanical ventilation from patients who did not meet brain death criteria continued to be called “killing” or “euthanasia” by many caregivers.

Key Legal Decisions

In the 1970s, the father of Karen Ann Quinlan, a young woman who was unconscious following a drug overdose, requested that a trial court in New Jersey name him her guardian with the expressed purpose of removing her from mechanical ventilation. He was opposed by his daughter’s physicians and the hospital in which his daughter was cared for on the grounds that removing life-sustaining therapy from her would be both illegal and unethical. After the trial court turned down his request, Mr. Quinlan took his case to the Supreme Court of New Jersey.

In its re Quinlan decision in 1976, the New Jersey Supreme Court reasoned that, were she somehow to return to consciousness momentarily, Ms. Quinlan would probably refuse further treatment that could not provide a sentient existence. The Court also stated that she had a constitutional right of privacy to make such a refusal. Since Ms. Quinlan could not exercise that right on her own, the Court appointed her father to make decisions for her. The Court also declared that Ms. Quinlan’s physicians and the hospital were not liable for her death if an ethics committee agreed that she could not regain consciousness despite further therapy.

In the 1980s, the parents of Nancy Cruzan, who remained unconscious months after an automobile accident, asked a trial court in Missouri to allow their daughter’s feeding tube to be removed over the objections of the state hospital in which she was housed. Although the trial court allowed the tube to be removed, the Supreme Court of Missouri ruled that such removal required clear and convincing evidence (e.g., a written advance directive) of Ms. Cruzan’s wishes before she became incapacitated. Ms. Cruzan’s parents then asked the U.S. Supreme Court to determine whether the Missouri Supreme Court’s decision violated their daughter’s right of privacy by imposing the evidentiary requirement.

In Cruzan v. Director, Missouri Department of Health, which was decided in 1990, the U.S. Supreme Court accepted the principle that patients capable of making medical decisions have a right to refuse any and all medical treatment. However, because the Court believed that not all families know their members’ wishes or adequately represent them, the court permitted states to require clear and convincing evidence of such wishes before life support is withdrawn at a family’s request. During the same year, Congress passed the Patient Self-Determination Act, which mandates that health facilities inquire whether patients have prepared advance directives regarding end-of-life issues before admission and, if they have not, help them to prepare directives if they so request.

Taken together, the Quinlan and Cruzan decisions permitted patients with decision-making capacity to refuse any and all treatment, including that which was potentially life sustaining. They also allowed families to refuse treatment when patients lacked capacity, with clear and convincing evidence of previous patient wishes required in such states as Missouri and New York. Nevertheless, the legal decisions did not give patients or families the right to expect that their demands for treatment would be met in all circumstances.
Nor did the Quinlan or Cruzan cases assert that physicians and other caregivers could decide to treat or not treat certain patients against the wishes of their families. In the years following these two cases, when physicians sought judicial approval to withhold or withdraw life support over family objections, as with In the Matter of Baby K, judges sided with families.

Yet, in Gilgunn v. Massachusetts General Hospital, the courts did not penalize the hospital or its physicians when they removed mechanical ventilation over family members’ objections. Gilgunn illustrated that physicians are more likely to get better legal results when they refuse to provide treatments they consider nonbeneficial than when they seek advance permission to do so. This is because, then, as now, the only test of physician behavior in not acceding to patient and family requests for or against treatment is that of medical malpractice, in which physicians and other caregivers can be successfully sued only if plaintiffs prove that they have violated professional standards.

The Ascendance of Autonomy

The Quinlan and Cruzan decisions were historic in that they helped establish respect for autonomy as the dominant ethical principle in American medicine. One aspect of the ascendency of autonomy was increased willingness of physicians to obtain informed consent under what came to be called a shared medical decision-making model. American hospitals discontinued their universal resuscitation policies, and physicians who had not done so already were asked to solicit patient and family wishes regarding CPR on admission to health care institutions. As a result, the do not resuscitate (DNR) order became commonplace in hospitals and nursing homes.

Reflecting these trends, Smedira and colleagues reported in 1990 that most patients who died in ICUs at the University of California–San Francisco and San Francisco General Hospital did so during the withholding and withdrawal of life-sustaining therapy with DNR orders in place. Because of their underlying diseases and the psychoactive drugs they were receiving, none of the patients could decide on their own to limit treatment. Instead, families made decisions for them either before or after physicians recommended that they do so, rarely guided by advance directives. Physicians made decisions by themselves only for patients who lacked families.

This study and others like it are historically important primarily for two reasons. First, the studies demonstrated that withholding and withdrawing life support had become common practice in ICUs in the United States. Second, the studies showed that they and physicians usually worked together in deciding whether or not to treat critically ill patients. The studies thereby advanced the concept of shared decision making while not drawing attention to the relatively rare cases in which families, physicians, and institutions disagreed about end-of-life care.

Some of these disagreements were similar to those in the Quinlan and Cruzan cases in that physicians and hospitals insisted on treating patients against family wishes. Other disagreements involved families who requested treatments that physicians were loath to provide for ethical reasons. Although the latter cases were the exception rather than the rule, most intensivists had some experience with them.

This experience was unsettling in that it reminded the physicians that the ascendance of respect for autonomy as an ethical principle infringed upon their traditional prerogative to treat or not treat patients on the basis of what they considered beneficial.

The Rise of the Futility Movement

One response to this perceived infringement on professional prerogatives was what has been called “the rise of the futility movement” during the 1990s. The futility movement was an attempt to convince fellow caregivers and the public that physicians should use their professional judgment and empirical evidence to determine which interventions were futile and thereby not worth providing from the physicians’ point of view. If such a determination was made, the physicians should be allowed to withhold or withdraw the treatment, even over patient and family objections. Ideally, physicians would be legally protected for such actions, if only because they were acting within what were or might become generally accepted standards.

Essential to the futility movement were attempts to define “futile,” a word that literally means “incapable of being accomplished.” Perhaps the best known attempt, that of Schneiderman and colleagues, offered quantitative and qualitative definitions. In their scheme, an intervention was quantitatively futile if “physicians conclude (either through personal experience, experiences shared with colleagues, or consideration of published empirical data) that in the last 100 cases a medical treatment had been useless.” Qualitative futility was defined as that which “merely preserves unconsciousness or fails to end a patient’s total dependence on intensive medical care.”

While definitions of futility were being created, intensivists also were developing prognostic scoring systems, based on physiologic data and other variables, to determine the severity of critical illness and the likelihood of surviving ICU admission. Perhaps the best known of these systems was the Acute Physiology and Chronic Health Evaluation (APACHE) of Knaus and colleagues, the second iteration of which was reported in 1985. Several years later, these investigators suggested that APACHE and similar systems could provide objective probability estimates for predicting when intensive care was futile in individual patients and using such predictions in clinical decision making. The estimates “can also form the basis of more equitable comparative entitlement determinations in response to scarce resources” and could thereby influence institutional or national resource allocation policies.

Prognostic scoring systems proved to be useful in stratifying patients according to severity of illness in clinical investigations and contrasting ICU admitting practices in various countries after adjusting for case mix, among other things. In addition, the comparability of caregivers’ predictions of hospital mortality with that estimated by APACHE II was verified. At the same time, however, the scoring systems were shown to have limited positive and negative predictive value. They, therefore, remained only adjuncts to less rigorous physician prognostication in clinical decision making.
The scoring systems were not used in resource allocation policies, which never became popular in the United States. The interest of intensivists in prognostic scoring systems and their involvement in the systems’ development were in large part due to the intensivists’ familiarity with the poor outcome of many ICU patients and the high cost of treating them. Some of the intensivists served as medical directors of ICUs. In this role, they were familiar with the frequent shortage of ICU beds and were asked by hospitals to influence other physicians to wisely use these beds and other medical resources. Although primarily motivated by the principles of beneficence and nonmaleficence, these physicians were also influenced by the ethical principle of distributive justice, which is the fair allocation of medical resources. This principle was cited by Knaus and colleagues in their assessment of the potential usefulness of prognostic scoring systems, such as APACHE, in making futility determinations.

In 1991, the Bioethics Task Force of the American Thoracic Society (ATS), which included several ICU directors, stated that “a life-sustaining intervention may be withheld or withdrawn from a patient without the consent of the patient or surrogate if the intervention is judged to be futile. A life-sustaining intervention is futile if reasoning and experience indicate that the intervention would be highly unlikely to result in a meaningful survival for that patient. Here, meaningful survival specifically refers to a quality of duration of survival that would have value to that patient as an individual. Survival in a state with permanent lack of consciousness (i.e., completely lacking cognitive or sentient capacity) may be generally regarded as having no value for such a patient.”

In 1997, the ATS Bioethics Task Force advanced the idea that the principle of distributive justice supported the position that “marginally beneficial ICU care may be justifiably limited on the basis of a social consensus that its cost is too high relative to the value of its outcome.” The ATS also noted that “decisions to limit care on this basis should not be made covertly by individual health care providers but only be explicit institutional policies that reflect a social consensus in support of the limitation. The following categories can be considered as candidates for exclusion from ICU care on this basis: patients highly unlikely to survive their acute illness or injury, even with ICU care; those facing imminent death due to a fatal untreatable underlying disease; and those who are permanently unconscious or irreversibly lack all cognitive function.”

Futility Policies

Although it did not claim that social consensus had been achieved regarding the high cost of certain ICU patients, the ATS statement sanctioned the use of what came to be called futility policies, which might allow physicians to limit potentially life-sustaining therapy with institutional support. One such policy was reported as a guideline by the San Francisco Bay Area Network of Ethics Committees (BANEC) in 1999. The BANEC guideline policy defined nonbeneficial treatment, allowed primary physicians to determine what was nonbeneficial, and created a procedure for dealing with cases in which physician and family disagreed over the benefits of care.

The BANEC procedure included consultation with a second physician who, if she or he agreed with the primary physician, could approach the family and seek agreement. If agreement was not reached, the primary physician would present the case to a hospital ethics committee. If the committee disagreed with the primary physician, the patient could be transferred to another physician at the same or another institution. On the other hand, if the committee agreed with the primary physician that care was nonbeneficial, it would so inform the family. The family could either seek a court order to continue treatment or request that the patient’s care could be transferred to a physician at another hospital. If transfer could not be arranged, “a plan for withholding or withdrawal of nonbeneficial treatment may ethically be made.”

Although the BANEC guideline policy was adopted by several hospital ethics committees in the Bay area, no published evidence demonstrates that the guidelines were endorsed or implemented by a majority of the hospitals themselves. Furthermore, a survey from San Francisco General Hospital, a BANEC member, indicated that most physicians would offer CPR to a hypothetical patient or patient’s family if the physician did not think the patient could benefit from attempted resuscitation, despite a futility policy that allowed them to do otherwise. Whether these physicians actually disagreed with the policy, felt a personal obligation to offer CPR to patients who they considered unlikely to benefit, assumed that patients or families would refuse their offer of CPR, or were concerned about the possible medical-legal ramifications of not offering CPR was not determined in this survey.

Also in 1999, Halevy and Brody described to a wider readership a multi-institutional policy in Houston that also used ethics committees to manage conflicts over limiting life-sustaining treatments if the conflicts were not resolved after consultation with a second physician. The Houston policy was similar to that of BANEC in that patients whose treatment was considered nonbeneficial by an ethics committee could be transferred to another hospital if that was possible; if it was not, further treatment could be withheld or withdrawn. Three hospitals, including Baylor College of Medicine, the investigators’ parent institution, had approved the Houston policy at the time it was reported. However, no cases had been adjudicated by their ethics committees, probably because most cases were resolved at an earlier stage.

Problems with Futility

Although futility policies were being developed across the United States in the 1990s, the policies and the futility movement itself came under increased criticism. For example, one commentator noted that the BANEC guidelines unfairly favored physicians’ interests over those of patients and families. Similarly, Younger stated that most medical interventions achieve some physiologic results and that treatments considered nonbeneficial by physicians may be valuable to patients and their families. Finally, Truog and colleagues argued that because what physicians may consider futile might be seen as beneficial by patients and families, futility determinations are inherently value laden. When physicians make them, the determinations often seem to be a covert way of allocating medical resources.
A more straightforward approach, Truong and colleagues argued, would be to overtly face the issue of resource allocation, which they considered an ethically and socially appropriate concern.

In keeping with this viewpoint, the Ethics Committee of the Society of Critical Care Medicine (SCCM)\textsuperscript{12} stated in 1999 that “treatments should be defined as futile only when they will not accomplish their intended goal. Treatments that are extremely unlikely to be beneficial, are extremely costly, or are of uncertain benefit may be considered inappropriate, and hence inadvisable, but should not be labeled futile. Futile treatments constitute a small fraction of medical care. Thus, employing the concept of futile care in medical decision making will not primarily contribute to a reduction in resource use.”

The SCCM Ethics Committee statement regarding problems with the concept of futility helped discourage the use of the term as a rationale for limiting life-sustaining therapy. Yet, one might argue that the SCCM Ethics Committee was merely substituting “inappropriate” for “futile” and that the committee was ducking the issue of how to resolve conflicts between physicians and families who disagreed about which therapies were “inappropriate and hence inadvisable.” Furthermore, although some commentators heralded “the fall of the futility movement” on the heels of the SCCM Ethics Committee statement,\textsuperscript{16} events would soon indicate that the movement was still alive.

**The Texas Experiment**

In 1999, the American Medical Association (AMA) opined that “since definitions of futile care are value-laden, universal consensus on futile care is unlikely to be achieved,” in keeping with the SCCM Ethics Committee statement.\textsuperscript{31} However, at the same time, the AMA allowed futility to be operationally defined at the local level, thereby supporting the concept that futility was an actual condition. The organization also endorsed what it termed a “due-process approach” to futility determinations based on the Houston model that had also been adopted by BANEC. In so doing, the AMA sanctioned the use of ethics committees to resolve conflicts over end-of-life care.

That same year, the due-process approach was adopted by Texas as an amendment to the Texas Advance Directives Act (TADA), which was originally written to prompt physicians to honor patient and family refusal of life-sustaining therapy.\textsuperscript{14} The TADA allowed a physician to request an ethics committee review of proposed treatment that the physician considered to be nonbeneficial. If the committee agreed with the physician, life support could be withheld or withdrawn if the patient could not be transferred within 10 days. A judge could extend this period only if there was a reasonable expectation of finding a willing provider.

In 2000, Fine\textsuperscript{35} described how the due-process approach had been used with a patient at Baylor who died during the 10-day waiting period. In a subsequent report, he and Mayo noted that six cases of presumed inappropriateness had been pursued through the conflict resolution process at Baylor since passage of the TADA amendment.\textsuperscript{16} In those six cases, three families agreed to the withdrawal of life-sustaining treatment shortly after receiving an ethics committee opinion. In two cases, the patient died during the 10-day waiting period without an alternative provider having been located. Although an alternative provider was found in one case, the patient died awaiting transfer.

In 2007, Smith and colleagues\textsuperscript{37} reported a survey of hospital members of the Texas Hospital Association performed in 2004. Only 40 of the 409 hospitals surveyed provided useful data on cases involving end-of-life care conflicts that had been reviewed by their ethics committees in keeping with the TADA. In 70 percent of these cases, the committees agreed with the attending physicians that the treatment requested by a patient or family was inappropriate; in 30 percent of the cases, the committees sided with the patients and families. After learning the committees’ decisions in support of physicians, 40 percent of the patients or families agreed to discontinue treatment. Another 44 percent of the involved patients died during the 10-day waiting period pending transfer, 17 percent were transferred to other physicians and facilities, and 4 percent of patients improved and continued to receive life support.

In the most widely publicized case, which was not included in the survey of Smith and colleagues, a hospital ethics committee in Austin invoked the TADA in deciding to remove mechanical ventilation from a 16-month-old child named Emilio Gonzales who had a progressive and uniformly fatal congenital disease. The family challenged the constitutionality of the TADA, but a federal judge refused to hear the case and referred it to a local court. The court issued a restraining order preventing the ventilator from being removed and scheduled a hearing to discuss the case. The Gonzales child died before the hearing, having spent five months in the ICU before he died.

In reviewing the Gonzalez case in 2007, Truong\textsuperscript{38} noted that although financial issues had not been raised by the ethics committee in Austin, such issues were worthy of consideration. Nevertheless, the due-process approach under Texas law that empowered ethics committees, such as the one in Austin, to be surrogate judges and juries in authorizing physicians to take actions against patients and families was one-sided because ethics committees are dominated by hospital staff members, usually contain few community representatives, and “are acculturated to the clinical world and its clinical values.” Regarding the Gonzales family, Truong stated, the ethics committee was “hardly a ‘jury of peers’ for a low-income woman of color and her infant son.”

In 2009, in a published point-counterpoint debate with Fine,\textsuperscript{39} Truong\textsuperscript{40} also noted that the TADA “is implemented most often in urban hospitals, which serve the majority of the uninsured, underinsured, and socioeconomically deprived. The law may therefore be disproportionately applied to people who have been denied, or at least believe they have been denied, beneficial treatments that are available to others. These families may believe that, once again, they are being deprived of treatment that is not only beneficial, but indeed life sustaining.”

To put the debate over futility determinations under TADA in historical context, Truong reminded readers that, in the 1970s, the father of Karen Ann Quinlan had argued that mechanical ventilation was futile for his daughter and should be discontinued.
Her physicians argued to the contrary, and had her case gone to an ethics committee similar to those in Texas today, such a committee might well have sided with the physicians. But Mr. Quinlan had access to the legal system, and the Supreme Court of New Jersey ultimately decided in favor of families having the right to refuse unwanted therapies.

**The Future of Futility**

To date, the constitutionality of the TADA has not been determined at a state or national level. Nevertheless, the due-process approach used under the TADA and with the AMA’s endorsement has been adopted by many U.S. hospitals. For example, according to Truog, the Children’s Hospital Boston has developed a policy that permits withdrawal of life-sustaining therapy that physicians consider futile after ethics committee review. Unlike the TADA, and similar to the policy guidelines developed by BANEC, the Children’s Hospital policy advises families that they have a legal right to seek a court order to prevent unilateral withdrawal of life support. Given the results of cases like Baby K in Virginia, judges in Massachusetts would probably support the families in these situations, but whether they have had an opportunity to do so is unclear.

What has happened across states like California, in which the probate code allows caregivers and health care institutions to decline to provide “medically ineffective care,” but does not define such care or specify a conflict-resolution mechanism, is also uncertain. In a half-dozen California cases in which I have served as an expert witness, claims filed by families who allege that physicians have committed malpractice in not following their wishes have been dismissed because the plaintiffs were unable to secure experts who would state that the defendants violated professional standards. L. Smith and I are reviewing legal databases to identify similar malpractice cases in California. So far, we have documented as many cases in which physicians refused to withdraw or withdraw therapies that physicians considered futile as we have cases in which physicians withheld or withdrew treatments they considered futile over the objections of families (L. Smith, J.M. Luce; unpublished data).

That physicians and families still disagree about providing end-of-life care suggests that little has changed since Quinlan. Yet, such a suggestion overlooks the relatively uncommon nature of such disagreements and the increasingly wide use of the shared decision-making model in preventing or ameliorating such disagreements. As described by White and colleagues, physicians using this making model in preventing or ameliorating such disagreements and the increasingly wide use of the shared decision-making model, according to Burns and Truog, who have chronicled the futility movement, believe attempts to define futility and develop procedural approaches have failed because of the lack of national agreement on “what constitutes beneficial treatment.” These investigators predict that the movement’s next phase will focus on communication and negotiation at the bedside. When communication and negotiation fail, Burns and Truog recommend that caretakers find ways of supporting one another in providing care they disagree with rather than overriding families’ requests. Of course, not all physicians will agree with the recommendations of Burns and Truog. Some, in fact, will refuse to accede to family requests and will overtly or covertly withhold or withdraw life-sustaining therapy from patients, as has been previously described.

Although the legal aspects of such cases are highly unusual, death after a prolonged ICU stay is not. Indeed, such cases remind us that even in states where caregivers are not required to provide treatments they consider futile, end-of-life conflicts between families and physicians may not be resolved until—or after—patients die.

**Acknowledgments**

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**References**

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34. Texas Health and Safety Code, Chapter 166.


41. State of California, Probate Code, Sections 4374-4376.


Case Scenario 1
Futility in the Operating Room

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At 3 a.m., the operating room takes a booking for an exploratory laparotomy on a 82-year-old male, Mr. X, who is thought to have ischemic bowel. He is brought down to the operating room, and his family is by his side. He is frail looking, 5-foot 11-inches tall and 100 lb. His abdomen is deeply and painful to palpation, his lips are blue, and his extremities show signs of hypoperfusion. He looks at you, says nothing and points to the DNR order taped to the front of his chart. The DNR order specifies various levels of care. It specifically states that intubation and vasoactive medications are to be avoided, though it does allow the use of blood transfusions. As you begin to question him, you realize that he is “mentally with it.” His family is increasingly agitated, wondering why you are asking so many questions, concerned that the delay will adversely affect his care. They want the surgery done. The surgeon, a good friend, takes you aside. She says she believes the surgery is a last-ditch effort. She is uncomfortable about performing the surgery but also uncomfortable with the consequences of not performing the surgery. The patient eventually states that he understands your concerns about his refusal of intubation and vasoactive drugs but that such treatment is consistent with his goals. He is thus willing to proceed with the anesthetic and operation without restriction. You place an arterial and pulmonary artery catheter. During the operation, you are faced with hypotension that is unresponsive to fluid therapy. You begin a dopamine infusion, which corrects the hypotension and improves the urine output. The surgeon finds and removes 2.5 feet of dead bowel. An expeditious closure follows, as does transport to the intensive care unit (ICU). By postoperative day two, the ICU team is unable to wean the dopamine infusion, and a chest film shows acute respiratory distress syndrome. The family wants to speak with you about your decision to intubate the patient and start the dopamine infusion.

1. What issues or concerns will you discuss with the patient, Mr. X, before surgery?

2. What questions do you ask the patient, Mr. X, before surgery?

3. How do you justify your use of a vasoactive infusion to the family?

4. What do you recommend to the family as the next step?
Instructor’s Notes

1. The focus of the discussion should be on Mr. X’s goals of care for himself and whether Mr. X believes intubation and resuscitation, as a means for facilitating the resolution of a potentially curable condition, are consistent with those goals of care.

2. Mr. X’s specific concerns surrounding the role of intubation and vasoactive support in relation to his goals of care should be discussed. Mr. X should be given the option to declare under what context he would like his DNR order to be suspended (i.e., for the procedure only, for the medical condition necessitating the surgery, or for the foreseeable future pending future discussions). Assurance should be given that should the procedure not result in the improvement of his condition or if the surgery must be aborted due to inoperability, his treatment will be revisited in light of his stated goals of care and wishes regarding the timing of his DNR order. Should his course progress in a manner that does not lead to resolution of his condition before his stated suspension of the DNR order, his wishes will be honored as expeditiously as possible.

3. You should explain your thought process that Mr. X’s stated goals were consistent at the time with his goals of care. Also, the family should be informed that Mr. X was cognizant that this outcome was within the realm of possibility in this clinical scenario. The use of vasoactive infusions would have been considered an appropriate action to take in this setting, given the goals of care established with the patient before the procedure.

4. A frank discussion should ensue surrounding the probable outcomes of care in this setting. The patient’s wishes and goals of care should be revisited, and they should be honored as he was promised before the surgical procedure.

Case Scenario 2

Enough Already, Let Me Die

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As a resident in the ICU, you are told to place a central line in Mr. Y so that total parenteral nutrition (TPN) can be started. He is a 56-year-old male with a history of disseminated squamous cell carcinoma of the lung, involving metastases to the liver, lung, and bone. He is refusing central-line placement, stating that he is in pain and just wants to die.

After further questioning, the patient states that he understands the implications of refusing parenteral nutrition. The ICU attending physician and the family have also spoken about the medical options, and they want to start TPN.

1. How should you proceed when the patient refuses central-line placement?

2. What biomedical ethics issues should play a role in your decision-making process?

Instructor’s Notes

1. The patient’s concerns regarding placement of the central line should be explored, and his goals of care should be reviewed in light of this line placement. Keep in mind the importance of conducting this discussion within a framework that acknowledges the difficult power dynamics that may have developed among a care team, a family, and a patient who apparently have different opinions about the line placement. Ultimately, the patient’s decision-making capacity appears to be intact, and, therefore, every effort should be made to preserve his ability to make autonomous decisions without the imposition of others’ value systems. If it were not the case that the patient retained decisional capacity, then the patient’s designated health care decision maker should be consulted to act in substituted judgment—specifically, this concept means that the decision maker’s role is to convey to the health care team his or her best understanding of what the patient would have wanted if the patient were still capable of stating his desires for himself. With these guidelines, the care team must ascertain whether the patient (or his decision maker) believes the line placement is consistent with the patient’s values and goals of care. Also critical to the discussion is to establish whether the patient’s pain is being treated appropriately and in what ways it may be affecting his ability to make autonomous decisions about the TPN line. In the final analysis, the choice to receive the line or not will, of course, rest with whether it is consistent with the patient’s expressed goals and values.

2. The principles of respect for autonomy, beneficence, and nonmaleficence all play a role in this clinical scenario. Although a resident is not the official decision-making physician in this situation, responsible behavior cannot be replaced by a claim of “just following orders.” Similar to the patient’s decisional predilection and conflicts, the resident may also believe he or she is in a position of a hierarchical power dynamic that makes appropriate care decisions difficult. The consequences of taking a stand may be risky for a trainee working under a supervisor whose judgment is in conflict with the resident’s own views. It is incumbent upon such supervisors to create an appropriate atmosphere not only for the patient but also for the care team. Residency programs and health care institutions should have in place well-defined mechanisms for nonrecriminative discussions of care decisions that may be at odds with an individual provider’s feelings about appropriate care.

Special Teaching Method Case Scenario 2

Medical Futility

The goal of this exercise is to understand the different views of what constitutes futile care. Discuss the following questions:

1. What is a “good” quality of life?

2. How often does a therapy have to be successful to be considered highly, moderately, somewhat, or rarely successful? What words do you use to advise a patient on the success of a procedure?
How can you convey to the decision makers the quality of the information you are giving them?

3. Should cost matter? How much is too expensive? Should it make a difference whether the therapy is paid by the patient, the insurance company, or society?

Case Scenario 3

Pediatric Futility

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An 8-month-old boy with trisomy 13 and surgically irreparable heart disease presents for an elective repair of a hernia.

1. With such a sick child, why even perform the operation?
2. What do you need to tell the parents about the anesthesia? What should you discuss about postoperative care?
3. The parents are still uneasy and not sure what to do. How can you help them?
4. The child dies intraoperatively. You feel awful. Should you have done the case?

Instructor’s Notes

1. This is a reasonable question. Patients with trisomy 13 have a limited life span and are mentally retarded. But, again, the question must be stated more correctly: Why risk death for a hernia repair in a child with a limited life span? Stating the question this way brings out the relative benefits and burdens. The parents are concerned that the child’s bowel could incarcerate through the large hernia. If that were to happen, he would then need emergency surgery. On the other hand, although the risks of surgery and anesthesia are great, performing it electively has several advantages: experienced and rested caregivers, optimized physical status, and the ability to delay the surgery if that option becomes desirable. The mother expresses the dilemma as “we’re damned if we do and damned if we don’t.” When viewed in the same light, it may be appropriate to consider a perioperative DNR order, if it becomes apparent that the burdens of continued therapy outweigh the benefits.

2. Be thorough and precise in this discussion. Anesthesia is the significant risk in this operation, the likelihood of morbidity and mortality is high, and the parents actively intend to use the information you give them in making the decision. Disclosure not only should include the risks and benefits but also the likelihood of events occurring and where this information comes from.

Emphasize that medicine and anesthesiology do not have extensive experience anesthetizing patients with trisomy 13. The ramifications of undergoing the stress of surgery is unknown in this debilitated patient. Therefore, the information you give the parents should be taken with the caveat that the knowledge is not really “tested” in their son’s population.

You can discuss the possibility of avoiding general anesthesia through regional techniques, such as a continuous caudal anesthetic. Explain your experience with the technique and what the literature says about it. Be clear that this is a very unusual case. When you offer opinions to the parents, be sure to qualify them, first, by acknowledging that they are in part based on gut feelings, and second, by giving rough percentages (e.g., 50 percent to 75 percent chance of mortality). To be able to make an informed choice, offer to arrange for the parents to discuss the issues with other experienced pediatric anesthesiologists and then give them time to make the decision.

Explain further that the result of the multiple variables in this case point strongly to either a goal-directed DNR order or a revocation of the DNR order with postoperative reevaluation. In addition to psychologically preparing the parents for postoperative difficulties, you need to start them thinking about how aggressive they wish to be during the postoperative period.

3. One way you can reassure the parents is by validating their feelings that this is a tough decision, one that can be “wrong” either way. Discuss with them the best interests concept and your belief that either choice is acceptable treatment. Consider offering an ethics consultation. The consultant can walk the parents through the information, making sure they understand the issues. The consultant will also validate their feelings and provide further confirmation as to the validity of their choice. The consultant can also offer emotional support.

4. Yes, you should have done the case, as long as the choice to proceed resulted from a good decision-making process. Bad outcomes do not necessarily mean that a mistake was made. In these kinds of cases, you have to expect some deaths, otherwise the decision of whether to proceed would not be so difficult. Even expected deaths may be overwhelming, however. Feelings of anger and guilt are not unusual after a situation like this. Although some introspection is good, discussion with selected colleagues is often therapeutic. When needed, short-term professional therapy for an acute crisis can help you regain perspective, and such avenues should be made available and encouraged.

Special Teaching Method

Several years ago, a close elderly relative asked to help him complete a perioperative DNR order and to become his durable power of attorney for health care matters. This well-educated man had a significant lack of understanding of the available options. Residents should seek out a parent or close friend and discuss how they might want to document their DNR status, particularly if they had to go to the operating room. The residents should probe their thinking, looking for inconsistencies and misunderstandings.
Fundamentals of Informed Consent
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Introduction
The concept of informed consent is important in two related but distinct realms: ethics and law. As a consequence of the litigious environment within which physicians practice in the United States, anesthesiologists are inclined to consider closely the legal considerations relevant to informed consent. Although these concerns are legitimate and important, this chapter will focus first on the ethical foundations of informed consent and then address the medicolegal concerns and ramifications.

Anesthesiologists are placed in a relatively unique position in their consent process. In general, the anesthesiologist must seek consent from a patient who has already agreed to a surgical or therapeutic procedure. In many institutions, consent for anesthesia is explicitly included in the surgical consent form. Because virtually no patients choose to have surgery without the benefits and protections of anesthesia, the process of obtaining informed consent for anesthesia differs substantially from the process of obtaining consent for a procedure. The focus of the discussion is thus not on whether the patient chooses anesthesia, but rather on the risks and benefits of the anesthetic procedures and techniques that might be used.

What Is Informed Consent?
The principle of informed consent is perhaps the most concrete extension of the dominant concept of Western medical ethics, the respect for autonomy. The idea is fairly simple; it essentially holds that a patient has the right to decide what will or will not be done to him or her (the “consent” component). Of equal importance is that the patient’s decision be made in the context of being as fully educated as possible as to the nature of his or her condition and the respective risks and benefits of choosing to undergo or decline the proposed medical intervention (the “informed” component). The simplicity of this principle is deceptive, however, and as the details of each patient’s individual circumstances are explored, multiple questions, such as the following, often emerge:

- Is the patient making the decision of his or her own free will, without undue influence or coercion?
- Does the patient comprehend the information with which he or she is being furnished?
- Does the patient possess the necessary mental capacity to process the information, understand the stakes, and make a reasoned decision?
- Is the information being provided to the patient thorough and unbiased?
- Has the patient been presented with the risks and benefits of all of the alternatives to the proposed procedure, including doing nothing?

In their classic primer, Principles of Biomedical Ethics, Beauchamp and Childress parse the process of informed consent into three sets of elements that they call threshold elements, informational elements, and consent elements as identified below:

#### Threshold Elements (preconditions):
- Competence and decision-making capacity (to understand and decide)
- Voluntariness (in deciding)

#### Informational elements:
- Disclosure (of material information)
- Recommendation (of a plan)
- Understanding (of disclosure and recommendation)

#### Consent elements:
- Decision (in favor of a plan)
- Autonomous authorization (of the chosen plan)

Although not exhaustively comprehensive, this framework covers the bulk of considerations in a standard informed consent process, even for complicated situations. Note, however, that scenarios that deviate from this model do arise, the most salient occurring when the patient elects not to undergo the proposed procedure. The consent elements would then reflect a decision against the plan, and autonomous authorization would not take place. In light of this potential outcome of an informed consent discussion, many authors prefer the term “informed decision making” to “informed consent” because the term equally accommodates the possibility of either consent or refusal.

Threshold Elements
Threshold elements are preconditions that must be present in order for a meaningful and appropriate consent process to take place.

Competence and Decision-Making Capacity
To consent to an intervention, a patient must be able to understand the information being provided, process the information, and make an autonomous decision. Much is made of the distinction between competence and capacity, the difference largely being that competence is a legal classification. For the purpose of a consent process, however, this distinction is not relevant; a patient either has or has not the necessary cognitive function to participate in the consent process. In the case of uncertainty, psychiatric evaluation is often used to assess capacity.

Voluntariness
Although voluntariness might at first seem to be synonymous with autonomy, the meaning is narrower. Voluntariness implies the absence of coercive influences, and, more specifically, this refers to control exerted by other people. Although conditions such as debilitating or aggressive disease, psychiatric disorders, or addictions may affect decision making, they are not considered coercive in this context. Rather, patients whose decisions are influenced by other people, through such mechanisms as threat, enticement, or guilt, might be influenced to forgo voluntariness, voiding the validity of an informed consent process. This should
not be confused with recommendation (discussed later), wherein a physician strongly advocates for a certain course of action. This would not be viewed as coercive unless the physician threatens the patient with abandonment or other consequences should the recommendation be rejected.

**Informational Elements**

Informational elements refer to the content and quality of the information provided to a patient in the course of obtaining consent, as well as to how the patient comprehends that information.

**Disclosure**

In the setting of consent process, disclosure means the description of a proposed intervention accompanied by a review of the expected benefits and potential risks. This term is somewhat troublesome because, in conventional parlance, the word disclosure implies the revealing of information that previously has been withheld or concealed. Further, disclosure is the term currently used in the context of providing patients with information about adverse consequences or unintended complications that have occurred as a result of medical treatments. It is important to recognize, in the consent process, that the word disclosure is a proactive description of the possible risks or complications of an intervention.

The standards for what should be the content of a disclosure discussion have evolved somewhat over the past several decades, to some extent molded by legal considerations.

**Reasonable Physician (Professional Practice) Standard**

One of the earliest concepts of disclosure established the standard as the information that a “reasonable physician” in a given community would provide to a patient regarding the risks of a proposed intervention. Not surprisingly, as the movement toward patient autonomy and shared decision making began to gain momentum, this standard increasingly became viewed as paternalistic and designed to allow physicians to protect one another.

**Reasonable Patient (Reasonable Person) Standard**

As the concepts of shared decision making and patient autonomy began to gain general acceptance, the focus shifted toward not what a physician would consider adequate information but rather what a hypothetical reasonable patient would consider adequate information. Most courts use this and the preceding standards.

**Particular Patient (Subjective Person) Standard**

The problem with the reasonable person standard is that among “reasonable patients” there is a vast spectrum of the level of detail patients actually wish to hear. The particular patient standard accommodates this reality and allows the physician to adjust the level of detail furnished to that individual patient’s desire to know. Although inherently appealing, this approach results in a relatively loose concept of a standard that has not been adopted by the courts, and physicians tend to impose more information on their patients than those patients really wish to receive for fear of being accused of withholding the possibilities of complications or unsuccessful outcomes. In the context of these considerations, the particular patient standard certainly can be followed, but the physician should ensure that all of the patient’s questions are answered and should carefully document the content of the discussion.

**Recommendation**

The important concept inherent in the term “recommendation” is that it is not coercive. Although physicians may indicate, even passionately, their belief that a particular course of action is desirable for a patient, they should not enforce their preference by coercion, such as by threatening abandonment or other limitations of full and robust care. Additionally and importantly, a physician must not manipulate the facts of a patient’s predicament to influence the decision. The distinction between persuasion and manipulation may be, at times, difficult to discern and requires thoughtful reflection on the part of the physician, who is ultimately in possession of the greater wealth of knowledge. In any case, a patient’s choice not to follow a recommendation should be honored and respected.

**Understanding**

A patient consenting or declining a procedure should be able to articulate an understanding of the nature of the procedure, its potential benefits and risks, and the possible consequences of the decision. Although part of this consideration is addressed by the assessment of decision-making capacity, the conditions under which high-stakes decisions are made may introduce confusion. Also, even persons with clear decision-making competence can exhibit confusion or misconceptions while receiving complex medical information. The standard here is essentially equal to the standard of the informational elements just discussed; the patient needs to be able to recapitulate understanding of the same informational elements identified earlier. Simply describing risks and benefits to patients is not sufficient; patients must be able to indicate their comprehension of those risks and benefits as they make their decisions for or against the proposed intervention.

**Consent Elements**

**Decision**

Once a patient has arrived at a decision, it must be clearly and unambiguously stated and then meticulously documented. In cases of high-stakes decisions, such as a particularly risky surgery, a detailed documentation of the consent process is warranted, with attention to all of the considerations described earlier.
Autonomous Authorization

The documentation of the decision should additionally reflect the patient’s autonomous wishes. In situations of high stakes or decisional controversy, it may be valuable to document the conditions under which consent (or refusal) was obtained, in particular as the conditions pertain to the patient’s autonomy, the absence of coercive influences, and the confirmation of decisional capacity.

Medicolegal Considerations

The past half-century of medicolegal decisions has been characterized by a progressive emphasis on the rights of the individual patient. An important manifestation of this trend has been apparent in the growth and development of legal attention to the importance of the principles of informed consent. The earlier standard of obtaining assent, the agreement of a patient to have a procedure, has been replaced over these decades by the legal expectation of obtaining consent, the autonomous, informed authorization by a patient to have a procedure. This was put in specific relief by three court cases: Salgo, Natanson, and Canterbury. Anesthesiologists should be familiar with these cases, which constitute the legal evolution of the principles of informed consent.

In 1957, the California court in Salgo v. Trustees of Leland Stanford Hospital first used the phrase “informed consent.” Salgo became paraplegic after translumbar aortography. He had not been informed of the risks of the procedure. The court ruled for the need for “intelligent” consent by requiring the physician to discuss the risks, benefits, and alternatives of a procedure to the patient.

In 1960, Natanson v. Kline began to define what information should be told to the patient to fulfill the requirement of informed consent. Natanson had severe radiation burns after the use of cobalt radiation therapy, a new technology. Although some disclosure of risks had taken place, the court held that the disclosure had been inadequate. This case introduced the professional practice standard (described earlier), which requires a discussion of risks consistent with what other physicians in the community would offer under similar circumstances.

In 1972, Canterbury v. Spence refined the legal standard of what material information should be disclosed in a consent discussion. Canterbury became quadriplegic after a laminectomy. He sued, claiming that he should have been informed about the low (1 percent) but finite likelihood of the significant complication of paralysis. Although the surgeons did fulfill the professional practice standard, the court held that the disclosure was insufficient and, in the decision, generated the reasonable person standard (described earlier), which requires a physician to disclose the information that the hypothetical “reasonable patient” would consider important in making a decision to consent to an intervention.

The two most powerful protections available to anesthesiologists in the medicolegal context are (1), the provision of a thorough and compassionate discussion of the risks and benefits of the anesthetic procedures with the patient, allowing time for all questions to be answered; and (2) meticulous documentation of said discussions in the medical record.

Other Issues

Summary

Other Issues

Same-Day Surgery and the Preoperative Evaluation Clinic

The trend over the past two decades of streamlining the process of preoperative evaluation has made obtaining informed consent more challenging for anesthesiologists. With the growth of same-day surgery and preoperative evaluation clinics, the anesthesiologist who performs the preoperative evaluation and obtains informed consent is not, most commonly, the anesthesiologist who will be providing anesthesia. In a day-surgery setting, a patient may not meet the anesthesiologist or undergo an informed consent discussion until minutes before the surgery, and the rushed atmosphere may compromise the process. Anesthesiologists need to be aware of these issues and take organizational, institutional, and personal steps to minimize their impact on the informed consent process.

Emergency Situations

The requirements for obtaining informed consent in true emergency situations are less strict. Implied consent for emergency care is based on the assumption that patients want life-sustaining treatment. Anesthesiologists should provide as much information as is practical. In emergencies, anesthesiologists are, for the most part, expected to provide care to a patient for whom they otherwise might have refused care on an elective basis.

Ethics Consultation Services

The process of obtaining informed consent can put anesthesiologists in the difficult situation of recognizing that there is an ethical dilemma that they are unable to resolve. Institutional ethics committees and their consultation services provide experience and expertise in helping to resolve such dilemmas.
References

Case Scenarios

Case Scenario 1
A Standard Preoperative Discussion
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You are asked to provide a preoperative anesthetic evaluation for a 32-year-old man who is scheduled to have an arthroscopy of the knee. He is otherwise healthy. The procedure can be performed under local anesthesia with sedation, regional anesthesia, or general anesthesia.

1. How do you greet the patient? Do you have to tell him you are a resident?
2. The first thing the patient says is “I want to go to sleep for this, Doc.” Should you restrict your discussion of anesthetic options to general anesthesia?
3. What do you need to tell the patient about each technique? How do you determine what you need to tell the patient? Give specific examples of a disclosure that meets reasonable person standards for local anesthesia with sedation, regional anesthesia, and general anesthesia.
4. If a resident wants to do an epidural (for experience), should he or she talk the patient into it? What are the differences between persuasion, manipulation, and coercion?
5. What do you need to write down? Why? Does documenting the informed consent discussion give legal protection?
6. How should the interview conclude?

Instructor’s Notes
1. Patients have a right to know to whom they are talking. An introduction should not only include a name but also the physician’s service, level (e.g., resident, attending), and role and whether that person will be doing the anesthesia.
2. It is not necessarily in the patient’s best interest for the anesthesiologist to readily acquiesce to a possibly uninformed request. An integral part of informed consent is that the patient should make a knowledgeable decision. The patient may be requesting general anesthesia because of a lack of information. For example, the orthopedic surgeon may have told the patient that general anesthesia is better, or this patient may have had a relative who had a bad experience with regional anesthesia. Probing these experiences is worthwhile so you can explain why this situation may be different.
3. Anesthesiologists need to forthrightly explain the advantages and disadvantages of each technique. Some patients may be more frightened of a needle-stick in the back than of some operative discomfort, and so they may prefer a local anesthetic. Others may want no pain at all. What is important is to interact with the patient so you can help him determine the best technique for himself.
4. The resident can certainly mention the advantages of an epidural (as long as the disadvantages are also presented), but the resident should in no way misrepresent the advantages and disadvantages to manipulate the patient into accepting epidural anesthesia. Patients and their caregivers may not share the same values. As such, the patient should be the one to decide which values should predominate.
5. Institutional requirements for informed consent have several purposes:
   - Remind caregivers of the necessity to obtain informed consent (anesthesiologists should think in terms of “getting” informed consent rather than “giving” informed consent; the former puts the focus on the patient, the latter on the physician).
   - Document that a discussion took place and that there was an exchange of information. Knowing the conversation is documented may prompt patients to ask questions, especially if they are able to read a written document.
6. The interview should conclude with the patient’s authorizing the anesthesiologist to perform a specific anesthetic. Residents should understand that the absence of an objection is not equivalent to an authorization. Even nonverbal patients can signify authorization with hand or head motions.

Case Scenario 2
Informed Refusal: General Anesthesia for a Cataract?
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Boston, Massachusetts

A 68-year-old woman with severe chronic obstructive pulmonary disease wishes to have general anesthesia for cataract surgery. As her anesthesiologist, you think local anesthesia with sedation poses less risk than general anesthesia. She can lie flat comfortably for the time needed for this procedure.

1. Are you obligated to present the other options?
2. How would you present the risks of general anesthesia without manipulating her (i.e., scaring her) into accepting local anesthesia with sedation? Can you “push” the patient into accepting local anesthesia with sedation?
3. If the patient continues to prefer general anesthesia, must you provide it for her? Is it coercive to tell her that she may need to return on a different day for a different anesthesiologist if she desires general anesthesia?
4. May you give her intravenous sedation so she calms down and is more willing to accept local anesthesia with sedation?
**Instructor's Notes**

1. Yes, you are obligated to present the other anesthetic options. In fact, part of the concept of informed refusal is the idea that a patient should have substantial knowledge about a technique before rejecting it. Therefore, it is appropriate and necessary for the anesthesiologist to educate the patient about the risks and benefits of both general anesthesia and local anesthesia with sedation; otherwise, she would not be making an informed choice. Persuasion is a justifiable technique for educating patients. Coercion is not. Properly informing this woman about options may help her consider a technique previously rejected out of misinformation. Indeed, the anesthesiologist should try to determine why the patient prefers general anesthesia and specifically address her fears while reassuring her about the safety and comfort of local anesthesia with sedation. The patient may still prefer general anesthesia for her cataract operation after the anesthesiologist has attempted to make her fully informed. This is the concept of informed refusal.

2. This is indeed a difficult question. Frightening a patient into accepting local anesthesia with sedation is neither ethically nor medically appropriate. On the other hand, the anesthesiologist has an obligation to forthrightly inform the patient. The anesthesiologist must then, in a calm manner, inform the patient factually why local anesthesia may be safer than general anesthesia. For example, the anesthesiologist could say, “I am not saying that general anesthesia is unsafe. In my opinion, however, it does give you a higher likelihood of having postoperative trouble. With your COPD, I am concerned that you might have some difficulty with your breathing after I remove your breathing tube. So, obviously, if I can avoid putting a breathing tube in you, I think you could avoid having complications related to a breathing tube, such as…”

3. In nonemergent circumstances, physicians are not obligated to provide care they believe is not in their patients’ best interest. This fundamentally arises from the ethical tenet “First, do no harm.” But, clinicians should be reticent to make this claim and should only do so in the truest of circumstances. This right to refuse to provide care is ripe for abuse because physicians can easily use this virtuous claim as a pretense not to provide care.

4. This brings forth a distinction between the appropriate use of sedation to calm an anxious but willing patient and the inappropriate use of sedation to manipulate a patient’s decision making. If she desired local anesthesia with sedation but asks to be “fortified” with sedation, that is appropriate. Part of anesthetic care is providing anxiolysis. But sedating a competent patient in order to reverse a previous decision is wholly unethical.

**Case Scenario 3**

**Your Informed Consent Process**

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Each department may have unique difficulties in the process of obtaining informed consent. Residents should evaluate their system and propose methods of improvement.

1. What system problems are currently present? How do these problems affect patient care and the obtaining of informed consent?

2. What are potential solutions? What is production pressure? What are sources of production pressure?

3. Does your current system reflect the impact of production pressure?

4. How can production pressure affect the ability and desire to enact potential solutions?

**Instructor's Notes**

1. Problems may include the following:
   - In the preoperative anesthetic clinic, the person obtaining informed consent does not administer the anesthetic:
     - The anesthesiologist has no opportunity to develop a relationship with the patient.
     - Anesthetic plans cannot be finalized until the day of surgery.
   - Patients are confused about who is caregiver.

2. Potential solutions may include the following:
   - The anesthesiologist can have a telephone discussion with the patient the night before surgery.
   - Preoperative discussions and other care can be better coordinated for patients with more complex case presentations.
3 and 4.

Production pressure is “the internal or external pressure on the anesthetist to keep the operating room schedule moving along.” Production pressures may cause anesthesiologists to deliberately cut corners or to make unintentional errors out of haste. Internal pressures include the desire to avoid delaying surgery, avoid litigation, and get along with surgeon as well as the push to work when fatigued. External pressures include exhortations from surgeons to proceed instead of canceling cases, hasten anesthetic procedures, and alter usual techniques. Anesthesiologists may feel pressure from administrators to reduce turnover time and limit the use of expensive drugs. External pressure may also come from colleagues, consultants, and the patients and their families.

“No one sets out to create a system that poses undue risks … nonetheless, in the absence of frequent overt negative outcomes, safety concerns may be eroded by the other increasing pressures. We are concerned that to appear competitive, to attract patients or to negotiate agreements with surgeons and managed care organizations, both hospitals and anesthesiologists may be tempted to make excessive claims of productivity, cost efficiency and safety that cannot be met realistically. In an era of progressively greater constraints on costs of care and growing intensity of competition, there will be increased pressure to increase production at the expense of safety.”

References
Brain Death
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Brain death, or what is now more accurately termed “declaration of death by neurologic criteria,” is a relatively modern phenomenon chiefly arising as a consequence of the development of critical care technology and intensive care medicine. Before the development of the capacity to sustain cardiopulmonary function, administer vasoactive agents, and deliver endocrine support, patients with catastrophic neurologic conditions would not have survived much beyond admission to the emergency department. The extension of these technologies to acute resuscitation in the field has further increased the population of patients who would have previously died before admission but could now be transferred to and sustained within an intensive care unit.

Although many clinicians recognized that some of these patients were beyond recovery, going so far as to identify “death of the nervous system,” there was no social, legal, and ethical framework by which to manage care. This led to problems with (e.g., recent opiate or paralytic use) or metabolic confounders (hypoxia, hypotension, or hypothermia) as well as toxic definitions of brain death. The Harvard criteria arose from a consensus of neurologists, ethicists, neurosurgeons, public health physicians, and theologians providing what was seen as greater objectivity in defining the state of neurologic death. Core to the definition of brain death was a state of unresponsiveness, cerebrospinal areflexia, and exclusion of physiologic abnormalities (hypoxia, hypotension, or hypothermia) as well as toxic (e.g., recent opiate or paralytic use) or metabolic confounders (e.g., hypothyroidism, profound metabolic acidosis, hypokalemia, hyperkalemia, hyponatremia) with a consistent history and presentation. The Harvard criteria also provided an important ethical maxim in its statement of the dead donor rule, which essentially says that living patients should not be killed for or by organ procurement, but that vital organs can be taken from dead patients.

The validation of the Harvard criteria for brain death was provided by the National Collaborative Study for the Determination of Cerebral Death in 1977. A series of 503 comatose and apneic patients were enrolled, of whom 102 met the Harvard criteria. Those patients that met the Harvard criteria all suffered cardiac arrest with widespread cerebral necrosis identified on autopsy.

That same year of 1968, the 22nd World Medical Congress produced a declaration, which, although less well-known, laid the philosophical and ethical foundation for defining a point of death of a person. The declaration effectively recognized a spectrum of death ranging through that of individual cells to tissue mass, then solid organs, and finally death of the organism as a whole. The key factor was the recognition of a threshold of irreversibility. Once this had been crossed, the inevitable death of the entire organism was certain and could be recognized as such. Death of the brain was seen as such a point of irreversibility beyond which would arise the inevitable cessation of all function of the organism, that is, death. This paralleled the insights afforded by developments in cardiopulmonary resuscitation where death of the brain would be an inevitable consequence of unsuccessful restoration of flow.

In 1981, the President’s Commission supported the definition of neurologic death as equivalent to that of the whole being. However, the Uniform Determination of Death Act (UDDA) in 1981 then gave equal basis to death by either cardiorespiratory criteria or neurologic criteria. The UDDA stated that “An individual who has sustained either (1) irreversible cessation of circulatory and respiratory functions, or (2) irreversible cessation of all functions of the entire brain, including the brain stem, is dead. A determination of death must be made in accordance with accepted medical standards.”

Subsequently, the criteria have been modified and evolved with a more exacting and consistent respiratory assessment of apnea and a distinction of spinal cord reflexes from those cerebrally mediated. Criteria for neurologic declaration of death include an appropriate history of acute neurological insult, an absence of pupillary response to light, an absence of cough and gag reflexes, absence of corneal reflex, absence of cular response to vestibular stimuli (oculovestibular or oculocephalic reflexes), absence of response to painful stimuli delivered to the trigeminal distribution, and absence of respiratory effort upon an adequate respiratory stimulus. This criteria of the absence of respiratory effort involves a sufficient period of apnea to elevate pCO2 above 60 mm Hg or 20 mm Hg above baseline (baseline being greater than 40 mm Hg and determined by a normal pH). Furthermore, testing of these reflexes must occur in the context of normal oxygenation.
normal blood pressure, normal biochemistry, and with the absence of toxins (iatrogenic or accidental) or endocrinologic dysfunction. Emphasis was also placed on the use of ancillary testing to supplement (rather than replace) what is largely a functional and clinical diagnosis.\(^{11}\) Most importantly, although imaging studies are informative and may validate a history of neurological insult, they do not directly illustrate function and, as such, should not be used as the sole evidence of death. The UDDA specifically refers to function, with a consequent dependency on clinical examination to provide a stimulus and detect a response.\(^{10}\) Where the ability to comprehensively examine is limited by circumstance (e.g., spinal cord injury precluding apnea testing), the imaging study may then aid diagnosis but can never entirely replace functional testing. In other words, as much clinical examination should be performed as is possible. Acceptable ancillary studies are limited to electroencephalography, angiography, and transcranial Doppler assessment of flow. Magnetic resonance, positron emission tomography, and computed tomography assessments of flow have not proven to be acceptably robust.\(^{12}\) Review of the accumulated experience by Wijdicks et al.\(^{12}\) has not shown any cases of neurologic recovery after declaration of brain death after appropriately experienced and qualified clinical assessment using the 1995 American Academy of Neurology parameters.

In adults, the number of required examinations and examiners, the specialty of examiners, and their experience are variable and debated. Opinion is divided between those who consider a single exam sufficient and those (like the author) who believe that to “err is human” and that safeguards are required against mistakes.\(^{11}\) Variability may descend to the level of the individual hospital, depending on whether state law is more specific than the UDDA or not (e.g., Florida, which specifies which specialties may declare death). Although pediatric criteria for brain death have also been established\(^{13}\) (broadly similar to adult examination, apart from inclusion of testing the rooting/sucking reflex when appropriate), the concern for ambiguity of clinical assessment in young children necessitates the performance of two exams (including an apnea test with each) by different examiners and prescribed time intervals between those assessments.\(^{13}\)

The ethical plausibility of the criteria for neurological death is fundamentally dependent on specificity—there can be no error, short cuts, or omissions in the battery of clinical tests used to declare. Failure to do so otherwise invalidates not just that individual assessment but threatens societal acceptance of the entire concept. Unfortunately, such deviations from accepted standards do occur, and a 2008 publication by Greer et al.\(^{14}\) highlighted the inconsistency of adherence to the American Academy of Neurology guidelines within supposed centers of excellence. The Cleveland Clinic and the Organ Donation and Transplantation Alliance offer excellent educational resources on their websites to address this concern.\(^{15,16}\)

Although clinical standards must be supported, attention should also be paid to the quality and clarity of communication of findings and conclusions. Even when death by neurologic criteria is suspected, the use of the diagnosis of brain death should be reserved for such a time as brain death is either being tested for or has been demonstrated to have occurred.

Confusion and miscomprehension among the public is understandable given limited communication skills among professionals, even in high-profile cases.\(^{17}\) Great care should be taken with the use of the words “alive,” “dead,” and “life support.” The term “organ support” is recommended to explain the continued use of cardiopulmonary intervention in the case of organ donors. Some clinicians recommend performance of neurologic testing for brain death in the presence of a family member to establish persistent unresponsiveness in the face of severely noxious stimuli. This counters the misperception that life endures in a perfused and ventilated brain dead patient.\(^{18}\)

Despite some confusion among the public, there has been widespread acceptance of the principle of brain death in more than 80 countries across the world as well as acceptance of the premise of declaration of death by neurologic criteria in most of the world’s major religions.\(^{19}\) Religious exceptions to the acceptance of declaration of death by neurologic criteria (supported legally in New York and New Jersey) exist chiefly from certain groups of Orthodox Jews.

Other countries use a brain stem death criterion, for example, the United Kingdom,\(^{20}\) with emphasis on the loss of cardiorespiratory and cranial nerve activity. Critics of this approach posit that death of the brainstem does not inevitably lead to death of the whole brain, with some quoted examples,\(^{21}\) but there is persistent uncertainty around the accuracy of diagnosis on those occasions. The United States continues to demand a higher burden of proof, that is, whole brain death, and this is unlikely to change in the near future.

Some commentators have argued for a redefinition of brain death based on their dissatisfaction with whole brain death criteria.\(^{12,22}\) Their criticism revolves around the occasional preservation of aspects of neurological function after brain injury, such as neuroendocrine function, which they see as inconsistent with the definition of whole brain death. In what may be considered an absolutist approach, they prefer an ontologic definition based on loss of higher functions of consciousness, consistent with a loss of “personhood.” Although intuitive on one level, there is no widespread acceptance of this principle, and significant concern exists for extension to other states of dissociated personhood, for example, persistent vegetative state.\(^{12,21}\) The argument, however, serves to illustrate an important point—that declaration of death of a person by neurologic criteria must be seen as not just a biological definition but also as a social construct. This in turn raises the specter of political and emotional intervention by a variety of motivated parties, with many unfortunate implications to consistency and clarity of management. Ample evidence of this has been presented recently in an unfortunate case in Oakland, California.
in which a mother who stated that her daughter was alive wanted to keep her daughter (who was declared brain dead) on life support.23

Although the societal consequences may be complex and polarizing, clinicians must maintain clarity and resolution in following the medical consensus. That should not preclude sensitivity to the acute tragedy of the situation, and there is a remaining duty of care and support to grieving families, many of whom will need guidance and explanation through the sequence of events.

References

Case Scenario 1
Part A
A 48-year-old woman is involved in a high-speed vehicular accident and suffers a severe head injury. She is brought into the emergency department, and you are called to intubate the patient’s trachea, as paramedics were unable to secure the airway beyond placement of a laryngeal mask airway. She is unresponsive to stimuli. As you secure the tube after successful videoscopic intubation, the neurosurgeon on call arrives on the scene and makes a quick examination of her response to pain and pupillary reflex. He then announces that the patient is brain dead and calls for a halt to fluid resuscitation and ventilation with removal of the endotracheal tube.

What do you do?

Instructor’s Notes
Although the patient may indeed be brain dead, the definition of brain death is dependent on making a declaration of death based on neurologic criteria. These criteria require a detailed examination of brain stem function with the exclusion in a comatose patient of the presence of hypoxia or hypotension, toxins/drugs, and biochemical and endocrine disorders. None of these confounders have been excluded at present, and indeed drugs may have been delivered in the field (e.g., muscle relaxants) contributing to the patient’s presenting condition. A comprehensive neurologic exam must be carried out before a diagnosis of death can be made in these circumstances.

Part B
The emergency department physician rejects the diagnosis of brain death, requests a second opinion, and continues the trauma workup. The neurosurgeon subsequently performs a full neurologic examination, including brain stem reflexes, and can establish no response to stimuli. You are asked to check the train-of-four responses to exclude persistent paralysis. You find that the patient has a train of four by use of a nerve stimulator.

Just as an apnea test is due to start, you note that the systolic blood pressure is down to 70 mm Hg. The neurosurgeon replies that this is sufficient for testing and asks the respiratory technician to take the patient off the ventilator for the apnea test.

What do you do?
Instructor’s Notes

Hypoxia and hypotension have been highlighted as confounders of neurological assessment, and a systolic pressure of 70 mm Hg in a 48-year-old patient would meet that definition. Any neurologic assessment in those circumstances would be invalid. In addition, doing an apnea test while the patient is physiologically unstable is both inappropriate and possibly injurious. A well-conducted apnea test in a stable patient should not cause harm, but the same cannot be said to be true in circumstances of physiological instability. The patient should be resuscitated to normotension and then an apnea test can be carried out.

Part C

The patient has been resuscitated appropriately and an apnea test is performed eight hours after admission, completing a comprehensive neurological examination. No responses were detected, and the patient is declared dead by neurologic criteria. The family is now present and informed, and they have refused requests for organ donation.

You are called back to the bedside to write orders for removal of the endotracheal tube. As you are doing so, the nurse at the bedside emphatically asks for “comfort care orders with sedation” to be written, before extubation.

What do you do?

Instructor’s Notes

Although this may seem to be an innocuous request on first glance, there are significant problems here to trap the unwary. First, the patient is now legally dead. The request for the sedation afforded by “comfort care orders” points to a lack of comprehension of this fact by the nurse. So that the family does not receive any confusing messages about the status of the patient that may aggravate their distress, the nurse should be counseled and educated regarding the status of the patient. Second, even if the family is not present, any therapy directed at altering the patient’s level of consciousness is effectively a statement of doubt regarding the diagnosis of death and serves to undermine the integrity of that diagnosis. This may have unintended consequences for the management of other patients with similar diagnoses in times to come. Third, the consumption of additional resources, albeit limited, contributes to wastefulness and inefficiency. The sedative infusions are not necessary, and billing the estate or family of the patient may, in fact, be seen as fraudulent practice.
Organ Donation
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Transplantation of organs from one human being to another remains one of the most dramatic advances of modern medicine, now rendered commonplace by the development of modern immunosuppression regimens. Nonetheless, it remains a testament to both scientific achievement and human altruism. In relatively few areas of life does the genuine wish to help others transcend tragedy or concern for the integrity of one’s body. Although payment models have been suggested, the significant concerns of exploitation and trafficking have inhibited any moves in that direction. Generally, donation is seen as a selfless and altruistic act. When it occurs after death, there is some evidence that it might offer later consolation to grieving relatives when they are looking for some positive attribute to the often-tragic events that have occurred. The fact that often someone else has to die to create the opportunity for organ donation should never be forgotten or taken for granted. Nevertheless, these are deaths, which would have occurred in any event, and the genuine altruism in signifying one’s intent to donate must be celebrated and respected.

Solid organ donation can arise from living donors (a kidney or lobe of liver is donated by a living subject) and from deceased patients. In all scenarios, the focus is on maximizing the opportunities for successful transplantation by providing optimal management of donors and recipients as well as appropriate selection of donors and recipients. The importance of this is evident when comparing the number of patients awaiting organ transplantation with the number of transplantations actually carried out. In 2013, there were 28,952 transplantations performed while the waiting list grew by 54,047, with a current total of 121,568 patients awaiting transplantation (based on Organ Procurement and Transplantation Network data as of March 14, 2014). With this deficit, 18 people on the waiting list die every day. This creates an ethical imperative to act that must be balanced with the risk of injuring or compromising potential donors.

Living Organ Donation
The first durably successful solid organ transplant was from a living donor, when Ronald Herrick donated a kidney to his twin brother, Richard, on Dec. 23, 1954, in Boston, surmounting the barrier of immune function that had bedeviled previous transplantation attempts. Innovation in immunology permitted extension to dizygotic twins and, thereafter, among persons of wider genetic distinction. Ultimately, viable cadaveric organs could be procured and used, yet it remains true that living donor organs provide the greatest efficiency in graft function.

Nothing in life is without risk, however, and it became quickly apparent that donors rendered themselves vulnerable to the limited reserves afforded by a single kidney or to the possible surgical complications of kidney, and especially hepatic lobe, procurement. Ethical principles had to be balanced. The respect for autonomy of the donor, and the beneficence of altruistic donation, had to be tempered by the equally important principle of nonmaleficence that was essentially summed up by the aphorism accredited to Thomas Sydenham (1624–1689): Primum, non nocere (i.e., “First, do no harm”).

Consequently, exacting standards are applied to the living donation process, with special emphasis on providing fully informed consent. This includes the use of an Independent Living Donor Advocate (ILDA) who must be distinct from the team caring for the potential recipient. This person has specific responsibility for advocating for the rights of the potential donor and promoting his or her best interests. The ILDA must have specific knowledge of a number of topics, including, but not limited to, the risks inherent in living organ donation, medical ethical issues, principles of informed consent, psychosocial risks, and especially the potential impact of familial or external pressures on the potential donor’s decision. This is keenly relevant given that 75 percent of living donation occurs between relatives. The need for sustained and detailed follow-up of the donor for a period of up to two years (to provide detailed assessment of any complications) must also be clearly understood. The ILDA must review and document the receipt of such information by the potential donor, augmented with specialist referral and consultation as required. This informational review also includes the performance metrics of the transplantation program(s) involved. Subsequent detailed physical, social, and psychological assessment is also required. A paramount principle is that the potential donor should be able to arrest the donation process at any time before surgery in a way that is protected and confidential.

Consequently, living donation is a rigorously controlled and extended procedure in order to best protect the concerns of the potential donor and minimize his or her risks. Programs are subject to regular review for accreditation by external validating agencies.

Donation from Deceased Donors
Donation after death can happen in one of two ways: (1) donation after declaration of death by circulatory-determination criteria (DCDD) (also sometimes referred to as DCD) or (2) donation after declaration of death by neurologic criteria (DDNC).

Historically, transplantation was first attempted via organ donation from non–heart-beating donors (i.e., after cardiac arrest). Success was frustrated by immunologic intolerance and ischemic injury. Such transplantations were generally limited to those organs able to survive prolonged interruption of circulation, such as the kidneys, and only became practicable after the development of immunosuppressive therapies. With the development of the concept of brain death (i.e., irreversible coma), focus shifted to the procurement of organs from beating-heart donors. Subsequently, the growing gap between organ availability and potential recipients forced a reconsideration of non–heart-beating donation, facilitated by patient- or surrogate-directed withdrawal of care in the critically ill.
The association of death and organ donation is not necessarily a negative one, as long as it is acknowledged that there is dependence implicit in that association that requires transparency and deliberation. This dependence mandates that the motivation for declaration should never be that of organ donation itself, and donation should always be of secondary consequence to the appropriate management of that patient. This principle of nonmaleficence is underscored by the Dead Donor Rule—that broadly states that living patients should not be killed for or by organ procurement but that vital organs can be taken from dead patients.

The principle of informed consent is relevant only to patients planning to donate after cardiac death. Once a declaration of death has been made, disposition of the body is covered by gift law, as opposed to the normal statutes covering medical interventions. After declaration of death, the principles of beneficence and support for autonomy are relevant to the concept of organ donation in that there is a general societal wish to support the intent of disposition of one’s body, especially to help others; however, no ethical imperative of autonomy on this issue exists, as the dead cannot be harmed. Yet, if donation does not occur, families and relatives might be affected by what they might perceive as disrespect for their loved one’s wishes. The converse of this latter point, that is, a family perspective that contradicts that of the donor, is a source of considerable tension and complexity. Ethical systems that extend a duty of care to the patient’s family might come into conflict with the principle of social justice, that is, a utilitarian approach of maximizing donor numbers in order to save lives on the waiting list. There are no clear answers, and careful judgment is required to navigate the pitfalls that present. Some states have adopted statutes to preserve the autonomy of the donor’s decision.

**Donation After Declaration of Death by Circulatory-Determination Criteria**

DCDD is triggered by the intensive care unit (ICU) team in that the decision to withdraw care is made before and without any consideration of organ donation. Shortly after such a decision being made by patient or surrogates, but before withdrawal, the local organ-procurement organization (OPO) is contacted by the ICU team and begins its involvement. Given the complexity around recipient matching and the logistics of deployment of organ-procurement teams from around the country, contact should be made as expeditiously as possible. The alternative is a self-fulfilling prophecy of failure to donate, as patients and/or families will often have dictated a limited time span of action rather than unduly prolonging care.

The responsibility of the ICU clinician team persists with ongoing care of the patient until the time of declaration of death. This care includes the actual removal of supportive therapies and facilitation of those consented investigations and maneuvers required for successful donation. All practitioners are advised to familiarize and involve themselves with their local hospital protocols (the existence of such a protocol being mandated by Centers for Medicare & Medicaid Services) for such events.

The OPO might request antemortem maneuvers to maximize the potential donation and, as such, require informed consent. However, strict ethical guidelines are required in such cases that inhibit the introduction of harm to the potential donors as well as preventing the ICU treatment team from being associated with the surgical procurement itself and preventing the procurement team from being involved in the management of critical care and the withdrawal of care.

Death is declared upon irreversible cessation of circulatory function, whereupon opportunity for transplantation of kidneys, liver, pancreas, and lungs may exist if there is swift recovery from the identified donors to minimize “warm” ischemic time. Successful procurement of organs requires circulatory arrest within one hour of withdrawal, and some surgeons will not use livers that have experienced more than 30 minutes of withdrawal because of an associated incidence of biliary stenosis with ischemic time.

The practice of DCDD has been controversial. Although DCDD is increasingly practiced, it still requires careful thought and adherence to ethical principles. Sedation and analgesia are often provided to the patient during withdrawal of therapies. This, as such, is covered by the principle of double effect, which allows the use of agents that will abbreviate life off the ventilator or inotropic support in order to minimize distress and/or pain. This latter goal is seen as the more pertinent given the inevitability of death as dictated by the patient’s or family’s decision to end therapy. Furthermore, there must not be influence or consideration of the subsequent donation process upon the timing, dosage, or delivery of these agents. This is one of the reasons for the now-strict compartmentalization of teams around the event. This was not always previously followed, with distressing consequences to all. Furthermore, the timing of declaration of death is now the more likely problem presenting controversy. The drive to minimize ischemic times, referred to previously, has induced a need to make the declaration of death as expeditiously as possible.

The question then arises: How long must there be an absence of cardiopulmonary function before procuring organs?

The risk of harm, although only theoretical, is the concern of inducing pain in the donor after the loss of cardiopulmonary function but before cessation of neurologic function. The practice of cardiopulmonary resuscitation has demonstrated that the brain can withstand brief periods of hypoxia and still recover function on the restitution of oxygenated blood flow. However, before assuming that all non–heart-beating donors are possibly experiencing pain, one must appreciate the evident distinction between maintenance and recovery of function supported by electrophysiologic studies of cerebral blood flow and the brain’s minimal energy reserves. Essentially, the brain will quickly fall into electrical silence and a lack of response to stimuli once blood flow decreases below 20 mL/100 g/minute. Each institution must make its own policy, but the recommendation from the Institute of Medicine is to use five minutes for the period between loss of cardiopulmonary function and initiating organ procurement, and the American College of Critical Care Medicine suggests using no less than two minutes and no longer than five minutes.
Depending on the institutional policy, the anesthesiologist might have little to no involvement in this situation, especially if withdrawal of life support is initiated outside the operating room. If withdrawal does occur in an operating room, anesthesiologist involvement may vary from maintenance of analgesic and sedative medication to extubation and, perhaps, even to declaration of death. Many anesthesiologists might feel uncomfortable in this setting if the scenario and protocols have not been previously discussed. The best advice to any anesthesiologist (or department) is to engage in a thorough discussion with all people concerned before any acute demands on their services.

A new dimension to the discussion has been added with the development of DCDD lung transplantation, where the lungs are procured and transplanted after death declared by cardiovascular criteria. This new practice requires reintubation after death has been declared. If the anesthesiologist serves in this capacity, he or she is now acting as a part of the transplantation team and must not have been involved in the withdrawal of support before this point. This role as a member of the transplantation team would preclude any participation in sedation management or the declaration of death.

**Donation after Declaration of Death by Neurologic Criteria**

In DDNC, after death is declared by irreversible cessation of function of the entire brain, the donor may be managed for some period of time in the ICU to preserve and maintain organ viability and allow coordination of the surgical procurement teams referred to previously. The OPOs must ensure that referring hospitals have followed their due procedures for determination of death (details of the determination of death by neurologic criteria are given elsewhere). (See also the chapter “Brain Death” in this syllabus.) Although OPOs must refrain from the actual diagnosis of death, they can and do have criteria for donor candidacy that might provoke discussion and requests for clarification with referring hospitals.

Both deontologic (i.e., the right thing to do) and utilitarian (i.e., good for the most) arguments exist for the strict application of well-thought-out standards on the declaration of death. These are intended to:

- Eliminate variability of diagnosis and hence (by minimizing delays in organ procurement) maximize organ potential, and
- Maintain public confidence in the performance of the declaration of death, without which organ donation might flounder and many more patients on the waiting list would die.

World religions, legal arenas, and families have supported DDNC. The major world religions support the practice of organ donation after DDNC, yet some religious exceptions are supported in the states of New Jersey and New York, chiefly for certain Orthodox sects of Judaism. Elsewhere, judges, on the whole, have supported the principles of death declared by neurologic criteria, with the exception of an unfortunate but few number of cases, as evidenced by events in Oakland in late 2013. Family members may acutely reject the diagnosis of death, yet with continued communication and reassurance, including neurological examination in the family’s presence, the family often accepts the circumstances. If the family continues to reject the diagnosis of death, they may be advised that progress toward removal of physiologic support and/or organ donation will continue to respect the patient’s wishes. Many acute grief reactions manifest in this way, and, ultimately, the reality is accepted with sensitive and thoughtful communication, though the facility must ensure that all staff are on board with the same message. The decision to proceed with organ donation in such circumstances is never easy but is often fueled by state registries, for which the principle of autonomy overrides the family opinion, as previously discussed.

**Advance Directives**

The increase in the use of advance directives among the general public offers another possible confounder to the practice of organ donation. The language specifying the conditions under which physician should cease the provision of active treatment and remove life-sustaining therapies is often vague and ill-defined other than a statement that the patient should be in a terminal state beyond which one is not expected to survive. As such, this may affect consideration of DCDD and DDNC.

A patient undergoing DDNC might have that process abbreviated before declaration by a family directing withdrawal of support in what they perceive as adherence to the patient’s wishes. A patient in whom DCDD is planned might again be moved to early withdrawal of support before the logistics of donor-recipient matching can be accomplished and procurement teams mobilized. An alternative approach is to consider both the goal of the advance directive and the fact that the prolific indeterminate templates do not preclude organ donation. The goal expressed by many is to avoid persistence of existence on maximal medical support with no reasonable chance of recovery. That in itself is not inconsistent with organ donation, and the question of withdrawal of support is not so much “if” but rather “when.” This principle has been supported in law with a 2007 addendum to the 2006 Anatomical Gift Act (which covers organ and tissue donation). This law, in the circumstance of such advance directives, instructs medical care teams not to act on the directives before facilitating reasonable opportunity for discussion between patients, families, and OPOs to allow the option of organ donation to be discussed.

**References**

2015 SYLLABUS ON ETHICS


Case Scenario: Set A

Case Scenario 1

Part A

You are asked to extubate a patient who is presenting to the operating room (O.R.) for organ donation after cardiac death. The critical care physician who has been looking after the patient until now asks you to administer some muscle relaxant at the time of extubation to prevent respiratory distress.

What do you do?

Instructor’s Notes

The principle of double effect allows for the use of sedative and analgesic agents during withdrawal of therapy to minimize any induced pain or distress. The use of muscle relaxants would not treat either circumstance and would hasten death with no treatment benefit. Consequently, this would be unethical, and the request should not be satisfied.

Part B

The patient is transferred to the O.R. while receiving morphine and midazolam infusions. The patient is prepared with antiseptic skin cleanser and draped. An extubation proceeds uneventfully, and after 23 minutes, there is no longer any visible deflection on the arterial line trace, although there are some irregular extrasystoles on the electrocardiogram. The transplantation surgeon enters the room and picks up a knife.

When is it appropriate for the transplantation team to incise the abdomen?

Instructor’s Notes

Declaration of death follows an absence of cardiopulmonary function, which may be detected by loss of electrocardiogram activity or pulsatile output on hemodynamic monitoring. The precise timing depends on local hospital policy. The Centers for Medicare & Medicaid Services dictates that each hospital develops a policy for declaration of death by circulatory determination criteria. The American College of Critical Care Medicine suggests that the appropriate timing for the declaration of death is no less than two minutes and no more than five minutes. Incision before that time risks the person’s awareness of the incision. Responsible clinicians should familiarize themselves with their hospital policy.

Case Scenario 2

A week later, you have just intubated a 59-year-old patient on the intensive care unit with devastating neurologic injury. The neurosurgical resident enters the patient’s room and tells you that the family now wishes to withdraw care given the established poor prognosis and an advance directive that instructs discontinuation of therapy in futile circumstances or persistent severe neurologic disability. He asks you to extubate the patient.

Do you agree?

Instructor’s Notes

Although the patient may very well face a poor outcome, the advance directive might not specifically address the option of organ donation. The patient might also be a registered organ donor, and this could be checked. Nevertheless, it is appropriate to maintain care until the organ-procurement organization has had a chance to see and evaluate the patient with a view to engaging the family in discussion. The 2007 amendment to the 2006 Anatomical Gift Act provides for exactly this scenario, and a discussion with the family should be initiated to allow the OPO to engage them before withdrawal of therapy.

Case Scenario 3

After a huge subarachnoid hemorrhage complicated by cardiac arrest in the field, a 45-year-old man has been declared dead by neurologic criteria after examination by two attending physicians (a neurologist and a critical care physician) within the hospital. The family rejects this diagnosis and believes the patient will recover. They refuse to consider removal of therapy. The local OPO tells you that the patient is a registered organ donor and plans to take the patient to the O.R. for procurement. You are the anesthesiologist on call.

What do you do?
Instructor’s Notes

This is an extremely complicated scenario with many ramifications. In the eyes of the law, the patient has been declared dead. Most previous jurists have maintained the integrity of the Uniform Declaration of Death Act and supported hospitals that proceed with removal of physiologic support, with the unfortunate exception of the Oakland case in late 2013. Although every opportunity should be taken to engage the family in the discussion of the diagnosis, including reexamining the patient in their presence, there will come a point where a line should be drawn. A common strategy is to advise the family that removal of physiologic support (not life support) will happen at a certain time and proceed with that plan.

The inclusion of organ donation into the problem adds complexity and heightens emotion. It can be, and is, argued that organ donation is an extraneous consideration given that all physiologic support will cease at a specified time.

Nevertheless, extending the duty of care to the patient’s family might incline one to mitigate or limit their distress by removing any suggestion of ulterior gain by not proceeding with organ donation. On the other hand, this consideration fails to address the distress of patients who might shortly die while awaiting organ transplants and who might be a match for the potential donor. That latter argument has induced OPOs and hospitals to proceed with organ donation in exactly these circumstances. Great care and sensitivity must be displayed at every turn, with every nuance of communication carefully examined. On the positive side, against the certainty of patient death, other lives have been saved through transplantation. Family members opposing donation have subsequently reacted positively to a decision to continue procurement and transplantation once their reactions of grief and distress have resolved. What is certain is that these are trying events that take their toll on all.

Sensible clinicians will avoid precipitate action or judgments and involve departmental and hospital resources in developing an informed consensus on the best approach to take in the individual circumstances that surround each of these cases.

Case Scenario: Set B

Brain Death: Dead or Alive?
Gail A. Van Norman, M.D.
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An anesthesiologist is caring for a vital organ donor during organ harvest. The donor is a 41-year-old male who was declared brain dead by a neurologist after suffering a subarachnoid hemorrhage. Across town, a 21-year-old patient, comatose from acute liver failure secondary to mushroom poisoning, is being prepared for liver transplantation. A 32-year-old woman with postpartum cardiomyopathy is being prepared for heart transplant.

After skin incision but before organ harvest, the donor is noted to have falling oxygen saturations and rhonchorous breath sounds. As the anesthesiologist suctions the endotracheal tube for copious secretions, the donor coughs.

Use a systematic approach to evaluate and discuss the clinical ethical problem presented in this case.

- What are the medical indications, risks, and benefits for the patient?
- What are the quality-of-life expectations from the planned surgery and the alternative of no surgery?
- What are the patient’s preferences?
- Are there any contextual features that should be considered?
- Who is the patient in this scenario? Does the anesthesiologist have an obligation to the transplant recipients? What resources are available to the anesthesiologist to solve this problem?

Instructor’s Notes

The Four Questions

Question 1: Medical Indications

When we speak of medical indications for a given procedure, we are referring only to the indications pertinent to the patient undergoing the procedure. In the case of voluntary organ donation from an otherwise healthy patient, there are no medical indications for the donor to undergo organ harvest. The risks of donation depend on the organ being harvested. In the case of nonvital organ harvest, such as renal harvest, the risks to a donor are the risks of surgery and anesthesia, such as bleeding, infection, and death from surgery as well as the risk of future renal dysfunction in the remaining kidney.

In the case of vital organ harvest, normally we are not speaking of risk to the donor, who must by legal and medical definition be dead at the time of harvest. There are no medical risks to a corpse. But what if the donor is not dead? Coughing is not compatible with brain death, and therefore, this donor is not brain dead. Vital organ harvest will, with medical certainty, result in death.
**Question 2: Patient Preferences**

The patient is unable to communicate preferences in this case. Even if he carried an organ donor card, we cannot presume that because he expressed a wish that his organs be used after death, he would therefore be willing to be killed for those organs. Had he expressed such a wish, principles of beneficence, nonmaleficence, and justice as well as the values of trust and respect for life would prohibit physicians from fulfilling such a wish.

**Question 3: Quality of Life**

Vital organ harvest will end this patient’s life, and quality-of-life issues become moot. Not undertaking organ harvest will certainly leave the patient alive, at least temporarily, with minimal prognosis for recovery. Although many of us might consider such a life not worth preserving for ourselves, it is a judgment that we cannot make for the patient, because the decision would involve having the patient weigh his values, experiences, and biases in determining what type of existence is a worthwhile one for him.

**Question 4: Contextual Features**

Vital organ harvest will benefit several other recipients, who at this point appear to have more attractive prognoses than the vital organ donor. But weighing the value of the worth of one person (such as the donor) against the worth of the lives of another (such as a potential recipient) would violate medical ethical principles of justice, which state that no one person’s life is worth more than another’s, regardless of the particular physical characteristics of that life. Vital organ harvest from a living donor stands to seriously harm the public’s trust that physicians will not sacrifice one patient for another and that every patient is treated with equal respect. One of the major causes of low rates of organ donation are public fears that they will not be dead at the time of organ harvest (such as with this patient), or that physicians will use them to benefit other patients. Vital organ harvest from this donor has the potential to render serious harm to future voluntary organ donations. Two recipients might benefit today from this donor’s organs, but it would be at the cost of potentially thousands of future patients who might be unable to get organs unless public trust can be enhanced. A small, current benefit is outweighed by the potential for overwhelming future harm.

**Case Development**

At the center of this case is this question: Should organ harvest proceed? The donor does not meet medical, ethical, or legal standards for death. Sacrificing the donor to obtain organs to benefit others violates principles of beneficence (to the donor and to society), nonmaleficence (to the donor and to organ transplantation programs), and justice (to the donor and to recipients). Proceeding with the harvest would further harm trust between physicians and patients for future donations and could cause irreparable harm to the ability of physicians to obtain voluntary organ donations for future patients. Proceeding with vital organ harvest is almost certain to violate statutes against homicide in almost any state and may place all participants in peril of criminal prosecution.

Although there are strong situational incentives to proceed, such as the knowledge that two recipients are awaiting transplant and the almost certain pressure to proceed from medical colleagues, the process should be stopped. Should pressure to continue the surgery arise, the anesthesiologist might consider calling on the following resources to support a decision to abandon the procedure:

- Hospital attorney
- Hospital chief of staff or medical director
- Hospital nursing director
- Hospital ethics committee

**The Rest of the Story**

In a case similar to this one, the anesthesiologist immediately informed the surgeon of the patient’s cough and of the implications that the patient was not brain dead. After initially objecting, the surgeon agreed that the procedure should be abandoned because of the question of an invalid declaration of death, together with the potential legal implications of proceeding. The incision was closed, and the donor was returned to the ICU where he died several hours later of cardiac arrest. The liver and heart were not transplanted.

**Special Teaching Method**

**Brain Death and Organ Transplantation**

Learn about your own department’s brain death and transplant policy:

- How and where would you find your policy?
- Is it consistent with this module?
  - If not, what is different and why?
- What is your department’s formal or informal policy on the assessment of a donor before organ harvest?
Conflict and Communication

The need for clear and accurate communication grows as the complexity of anesthesia care increases. The use of complicated surgical and procedural equipment, dependency on anesthesia care delivery outside of the operating room suite, difficult and specific patient positioning needs, and the decisions to offer complex, long and invasive surgeries to patients with significant comorbidities have made communication a prime consideration in patient safety and outcome. Indeed, a central tenet of simulation learning, anesthesia crisis management, and patient safety foundational principles is functional teamwork, including good communication skills.

The time-out and checklist processes, with mandated participation by everyone in the operating or procedure room, including the patient if awake, are now the accepted standard of care in the United States. The number of yearly peer-reviewed articles on the surgery checklist has increased sixfold in the last decade, and the World Health Organization has endorsed the checklist on the global scale. However, the checklist is meaningless without the attention of and communication between participants, and the preemptive resolution of misunderstanding and conflict by all those participating in the care of the patient.

The growing interest in understanding the importance of communication and ways to minimize conflict escalation in the operating room has resulted in a chapter in Clinical Ethics in Anesthesiology: A Case-Based Textbook on “The abusive and disruptive physician” and an entire textbook: Handbook of Communication in Anaesthesia and Critical Care: A Practical Guide to Exploring the Art.

Conflict occurs daily in the operating theater. Although unresolved conflict is undesirable, conflict itself can be positive. Conflict is often the first step to addressing issues, crystallizing problems, and attempting resolutions. Indeed, the absence of conflict does not mean the absence of problems. A culture that prides itself on avoiding conflict likely has many unresolved and ongoing problems; suppressing conflict is potentially dangerous. Conflict is a learning process that, while not necessarily enjoyable, promotes finding solutions and brings growth, change, and innovation. The very heart of ethics is the analysis of the conflicts inherent in difficult situations: if the path or decision were clear, no dilemma would exist.

Conflict is most likely to result in positive effects when the issue is clearly articulated, discussion is rational and focused, negotiations are based on good faith, and attempts are made to understand the other party’s position. Unfortunately, conflict is frequently based on intense or uncontrolled emotions, self-centered competition, inadequately declared goals, and historical and contextual complicating factors. This type of conflict in the workplace can lead to compromised patient care, dissatisfaction among patients, and stress for all involved. Thus, it makes good sense to have a systematic approach to resolving or managing conflict.

Types of Conflicts and Solutions

Understanding the type of conflict can lead to better management of expectations. Short-term conflicts involve negotiable disputes and generally need to be resolved within short time frames. Most conflicts with patients, physicians, or other health care personnel about patient care are of this type.

Long-term conflicts involve questions about the distribution of resources and determination of authority, and are often deeply rooted in personal values. Conflict resolution is the creation of a steady state that is acceptable to at least one, and preferably all, of the parties involved. Conflict management involves using various strategies to reach the best possible outcome, which may or may not result in conflict resolution.

What Aggravates Conflict?

Rarely is there only one problem at the heart of a conflict. The following categories of issues are somewhat arbitrarily divided for the convenience of discussion.

1. **Core of the conflict is not recognized**: The core of the conflict is what the conflict is really about. Consider, for example, a conflict arising between a person complaining about turnover time in a bellicose manner and another who is insulted by the manner in which the problem is being addressed. The first person may believe the conflict is rooted in issues involving actual turnover time, but the second person is more likely to frame the conflict in terms of respect and appropriate behavior. Disagreement over the core of the conflict makes it difficult to resolve the conflict, and may lead to confusion. Confusion may lead to ambiguity about what the goals for resolution should be, which, in turn, leads to meaningless actions that often cause further problems and exacerbate misunderstandings.

2. **Complicating factors intervene**: Complicating factors obscure the core of the conflict, intensify the estrangement, and may prevent resolution of the core problem. They include, but are not limited to, mistrust, questions about facts, motives, personal preferences, and stereotyping. Differing views on what constitutes justice, fairness, or a moral action, as well as personal pride, may also complicate attempts at successful resolution of conflicts.
3. **Framing problems**: Misunderstandings tend to arise from how people view, describe, or interpret events—or “framing.” These views are rooted in individual values, experiences, and knowledge. Anesthesiologists should make an effort to recognize their framing, accept that others may have alternative framing, and develop strategies for understanding when inappropriate framing interrupts successful resolution. Framing a problem may lead to an adversarial or win-lose scenario that, in turn, leads to fights over power and further escalation. “Misframing” can impede effective communication and demonize those you are in conflict with.

4. **Position taking**: Position taking is the act of converting the argument into an issue of “this is my position” and not “what is best or right here.” Position taking is the first step toward viewing resolution of the problem as a competition in which the focus is on winning and not resolution.

5. **Inadequate scoping**: “Scoping” refers to the process of identifying the parties involved and their level and extent of interest, and then determining which persons are adversaries, allies, mediators, decision-makers, and outside influences. Scoping problems may occur if there is a failure to identify all the issues or gather needed information; when different definitions of words like “good,” “appropriate,” and “success” are adopted; and/or if conflict history and differences in communication are ignored. These mistakes can cause unstated motives to be assigned to others and can lead to avoidance of communication, inflammatory actions, and escalating problems. The outcome can be increasingly contentious behavior, polarization, and personal attacks.

6. **Communication problems**: Communication problems are exacerbated when parties do not make themselves available for timely interaction, when the people key to communication and conflict resolution are not identified, and when “supporters” and “nonsupporters” are not equally included in the exchange. A common communication problem for anesthesiologists may be the phenomenon of “staff room support,” which is the tendency to discuss the issue at hand only with like-minded persons. Such behavior perpetuates your own beliefs by not allowing them to be sufficiently challenged, fosters emotional reactions, and turns “the other” into a one-dimensional adversary. Such behavior impedes conflict resolution.

   In conflicts, we tend to be unclear, indirect, uncomfortable, and poor listeners. Poor listeners often assume they know what others will say, or they are too busy preparing a response to hear what is being said. We tend to hear what we want or expect to hear. The quality of listening and communication deteriorates when either party is angry or mistrustful. Poor listeners ask few clarifying questions, do not question their own understanding of the other’s perspective, and jump prematurely into response mode.

   Another communication mistake is devaluation of the adversary, such as a mistaken belief that the adversary has certain motives, based on rumor or stereotype. Stereotypes may be perpetuated when people focus on anecdotes and rare examples that, while not the rule, nevertheless support the stereotype. One result is that antagonists interact less often and more guardedly.

### Managing Emotions

As conflicts progress, people may personalize the issues and experience feelings of enmity and mistrust. They become less free with information and more likely to negatively misinterpret what the other person says. Nonverbal cues of anger and frustration further hamper the ability to send and receive messages, fostering misinterpretation. Therefore, it is advantageous to focus on behaviors rather than motives or beliefs. For example, a statement such as “You need to turn the room over more quickly” focuses on a belief about the person (that they are not working quickly enough), whereas the statement “You should make up your drugs for the next case if the opportunity arises during this case” is a suggestion about a specific behavior that may help room turn over time.

### Failure to Identify Options

A significant factor aggravating conflict can be the failure to identify options. This is most often a result of inadequate identification of the core of the conflict and ambiguous goals for resolution. Often, conflicts are framed in a “this-or-that” manner, disregarding possible options. We ignore options because (1) we’ve never done that before, (2) we can’t do it (with no clear-cut reason), (3) we’re too busy being angry or laying blame to think about a resolution, (4) knowledgeable people are excluded from the discussion, (5) communication has failed, or (6) we’re too busy trying to win.

### Patterns of Behavior

The desire to identify sources of conflict and the willingness to attempt conflict resolution are stymied by the tendency to fall back on dysfunctional patterns of behavior that (at least temporarily) appeared to have helped us in the past. Thus, bullies bully, whiners whine, avoiders avoid. In medicine, there is a great deal of a “might-makes-right” (“might” by authority, money, or position) mentality and its attendant fear of the power structure. People who feel disempowered are more likely to dismiss the conflict as not being in their purview, avoid or sidestep the issue at hand, and not participate in resolution.

### Disagreement About the Facts

If one cannot agree on the basic facts of the situation, then there is no realistic hope of arriving at any successful resolution. Arguments about facts arise from questions about the data source, statistics, validity, importance, and cause. Interpretation of facts, of course, often brings forth additional conflicts.
Escalation

Escalation refers to an intensification of conflict. Issues transform from specific to general, the number of parties increases, tensions rise, and the goals change from doing good to winning. Minimizing escalation requires that people depersonalize internal thoughts and external expressions, establish communication ground rules, and use respectful and effective language.

“That’s not how we do it here,” is an example of language that is disrespectful, infuriating, and off-putting—its underlying message is “You are not one of us.”

Fixes for Conflicts

The fixes are simple in theory, but difficult in practice.

1. **General principles:** The basic premise for success is to be the “grownup” in the room. Avoid provocations, keep your eye on the ultimate goal, and preserve communication. Try not get caught up in proving you are right, beating an adversary, or making a mountain out of a molehill. Most importantly from an ethical standpoint, avoid strategies that adversely affect patient care. You are more likely to succeed in handling conflict if you are psychologically and intellectually prepared to manage the situation and achieve a solution. Attempt to focus on the question by redefining the problem in terms of interests, avoiding discussion of positions, and separating the antagonists from the problem, at least until tempers have cooled. Choosing an appropriate place and time to engage in discussion can favorably affect one’s probability of a successful outcome. Long-term conflicts are usually not best resolved in the operating room. Consider reasons underlying why people have differing positions. Arguments that are framed in a context of what is ultimately best for the patient are much more likely to be better received than arguments on what is better for you.

2. **Listen actively:** Don’t think about the reply while the other person is talking. Pay attention to assumptions. Take the time to reevaluate issues; even those questions to which you think you know the answer. The other person may truly appreciate the opportunity to be heard. One common hindrance to active listening is the natural tendency to pre-rehearse conversations and to prepare a response to what we are certain the other person will say. This prevents an appropriately reflective response to what the other person actually does say.

3. **Acknowledge history:** Some people refuse to let go of their comfortable and reaffirming perceptions of the world around them. Try to understand how your own history affects your ability to view the conflict, the participants, and the meaning of success. Use this knowledge to resolve conflict and not as a roadblock or bludgeon.

4. **Get help:** Obtain timely, practical, ethical, and legal consultation to help clarify facts and define pertinent issues, understand positions of those involved (including self), consider relevant principles and consequences, look for creative solutions, and accept the need to weigh the issues. One source of frustration for anesthesiologists is a divergence of perspective with their surgical colleagues as to how to manage conflict. In one study, surgeons were significantly less likely to desire to seek support for interpersonal conflicts in the workplace compared with anesthesiologists (28 percent versus 62 percent).

5. **Understand that jerks exist:** The fact of the matter is that not everyone is a nice person. There are some standard ways of responding, or perhaps even not responding, to people who do not seem to prioritize the common good. Don’t react to provocations. Rather, focus on the facts, and avoid stereotyping and/or being distracted by previous conflicts.

Summary

Parallel with the increasing use of advanced technology and information systems is the ever present if not increasing need for accurate, comprehensive, and respectful communication. Listening skills remain the foundation of good communication. Anesthesiologists should introduce themselves to patients, family members if present, and operating room personnel. Time-outs, communal checklists, and post-case debriefings are part of the framework for good communication but do not obviate the need for good communication and conflict resolution skills in the intraoperative and perioperative periods. Identification of conflict issues, acknowledgment of potential pitfalls and barriers, respectful discussion of the issues, and prioritizing patient safety and care are essential skills in daily practice. Conflicts in the workplace can lead to stress and should be considered whenever well-being is discussed. Explicit discussions of communication skills and conflict resolution issues should be part of training programs as well as ongoing practices and continuing education curricula.

References

Educational Exercise

In the week preceding a resident session, residents should be instructed to pick a day and to write down every conflict in which they participate or that they witness during the operating room day. For each conflict they should answer the following questions:

1. Who was the conflict between?
2. What was the conflict about?
3. Was the conflict resolved or swept under the rug?
4. Was the conflict recurring?
5. In the resident’s opinion, was the conflict being discussed truly the underlying problem?

At the resident session, they should be asked to broadly characterize the conflicts they witnessed and to consider how some of the examples could be handled in the future.

Case Scenarios

Considering the principles outlined in this section, discuss how the following problems should be approached.

Scenario 1

A surgeon yells at you in the operating room, complaining about how slow the room is running and his need to catch an afternoon flight.

Scenario 2

After a failed labor epidural for analgesia, the patient accuses you of “doing something wrong and not telling me.”

Scenario 3

A surgeon has scheduled more elective cases for the room than she can perform in her block time by booking the cases for shorter durations than you think are accurate. You are concerned that not all of the cases can be done while optimal resources are available and that some cases may need to be canceled. You ask the surgeon if there are any cases that have higher priority and should be moved earlier in the schedule. She insists she can do all of them as scheduled.

Scenario 4

As the attending on call you are supervising two senior residents who are performing anesthesia for two sick neonates. Your call team has one very junior resident left, and you get a stat call informing you that you have an emergent sick and bleeding “bring-back.” Feeling unable to handle all three cases safely, you follow written protocol and page the backup attending who is on call to help you. She tells you that she thinks you ought to be able to manage the situation, and she is not going to come to the hospital.

Scenario 5

The operating room nursing team insists on being completely set up before allowing you to bring the patient into the room, even though you have explained that you need to do a number of lines after induction. The surgeon, seeing the patient still in the holding area, expresses his displeasure to you that the patient is not yet anesthetized.

Scenario 6

The last patient of the day is a 30-year-old man scheduled for knee arthroscopy. Your day has been rather rocky, including difficult intravenous placements and airway managements as well as a cancellation that led to a shouting match between your attending and the orthopedic attending. During the next to last case, your attending tells you to start the intravenous line on the last patient while he provides care for the current patient. As you interview the last patient, he tells you that he had a hamburger and fries four hours ago. You return to the operating room where you inform your attending about the food; as you tell the attending, the surgeon interrupts, exclaiming, “Look, you guys have hurt me enough already. Just give him a little bit of sedation, and I’ll do it under local anesthesia (monitored anesthesia care). You can do that, can’t you?” Your attending looks at you, shrugs, and tells you that although you should inform the patient about the risk of regurgitation and aspiration, you should also tell him that it is probably pretty safe to do the procedure with local anesthesia and a little bit of sedation.
Ethical Issues Involving Jehovah’s Witness Patients
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Not many topics can pique the interest and sometimes the ire of clinicians like the topic of Jehovah’s Witnesses (JWs) and their refusal of blood and blood products. Why is this? Has not the topic of informed refusal by competent adults already been extensively discussed and defined in the medical and ethics community? Our response may be because of the dilemma we are faced with whenever we think our ability to respect the patient’s autonomy is at odds with our desire to do good and to do no harm.

Jehovah’s Witnesses
The JWs began as a Bible study group formed in 1870 by C.T. Russell in Allegheny, PA. They believe God’s name is Jehovah, which is an English translation of the name that appears in Hebrew texts. They also believe in the literal interpretation of the Bible, except in cases in which it is obviously allegorical. The JWs believe only one government is owed allegiance—God’s Kingdom. Therefore, they do not salute flags, serve in the military, or vote in political elections. They also believe we are living in the “last days.”¹

Like many religions, JW beliefs and teachings have evolved as society has evolved. In 1945, there was a ban placed on blood transfusions based on three quotes from scripture (New Revised Standard Version):

Genesis 9:3 Every moving thing that liveth shall be meat for you; even as the green herb have I given you all things. But flesh with the life thereof, which is the blood thereof, shall ye not eat.

Leviticus 17:10–16 I will set my face against the soul that eateth any manner of blood, and will cut him off from among his people. … no soul of you shall eat blood, neither shall any stranger that sojourneth among you eat blood. … Ye shall eat the blood of no manner of flesh; for the life of all flesh is the blood thereof; whosoever eateth it shall be cut off.

Acts 15:28–29 [T]hat ye abstain from things sacrificed to idols, and from blood, and from things strangled, and from fornication; from which if ye keep yourselves, it shall be well with you. Fare ye well.

A 1951 Watchtower article explained the reasoning that led to this ban on blood transfusion: “when sugar solutions are given intravenously, it is called intravenous feeding, ...the transfusion is feeding the patient blood and ... (the patient) is eating it (blood) through his veins” [bold type added].

Over the years, adaptation has been required to keep up with advances in medicine. New guidelines have been developed to help members deal with renal dialysis, cardiopulmonary bypass, blood harvesting (including cell saver), acute normovolemic hemodilution (ANHi), autologous blood donation, and organ transplant.²

Table 1 is a timeline of significant events in the Jehovah’s Witness faith.

<table>
<thead>
<tr>
<th>Year</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>1870</td>
<td>Study group formed</td>
</tr>
<tr>
<td>1879</td>
<td>First issue of The Watchtower published</td>
</tr>
<tr>
<td>1901</td>
<td>Discovery of ABO blood groups</td>
</tr>
<tr>
<td>1914</td>
<td>First blood bank transfusion</td>
</tr>
<tr>
<td>1931</td>
<td>Changed name to Jehovah’s Witnesses</td>
</tr>
<tr>
<td>1945</td>
<td>Ban placed on transfusions</td>
</tr>
<tr>
<td>2008</td>
<td>7.1 million members worldwide and 1.1 million members in United States</td>
</tr>
</tbody>
</table>

Because of the ban on blood, JWs believe their eternal salvation can be forfeited upon receiving a blood transfusion. Also, because of the quote from Leviticus, if they accept banned blood products, they are in danger of being cut off or ostracized from their communities.

However, a forced blood transfusion would not be viewed as a sin. Also, if under extreme pressure and while experiencing undue stress, a JW was to compromise his or her beliefs and accept a blood transfusion (in other words, if he or she caved in at a moment of spiritual weakness) yet still held to his or her beliefs, that person would not be ostracized by the JW community; rather, kindness would be shown and pastoral help offered. Nevertheless, a forced transfusion or a compromise with one’s conscience may leave the patient with deep emotional scars. Therefore, it is important to emphasize that, to JWs, the sanctity of blood is central to their faith and must be acknowledged and respected by anesthesiologists who are providing care.

Ethical Principles
Ethical dilemmas can be examined in the context of the four basic principles of medical ethics defined by Beauchamp and Childress: (1) respect for autonomy—a norm of respecting the decision-making capacities of autonomous persons; (2) beneficence—a group of norms for balancing benefits against risks; (3) nonmaleficence—a norm of avoiding harm; and (4) justice—a group of norms for fairly distributing benefits, risk, and costs.¹ In the United States, the principle of respect for patient autonomy is usually the most heavily weighted of the four, whereas in many European countries, the principle of beneficence may weigh more heavily than does respecting individual autonomy. The principle of beneficence has also been used in the past to justify giving transfusions against a patient’s will, but a devout JW will consider the withholding of blood, even to the point of death, an act of beneficence.
Adults with appropriate decision-making capacity express their autonomy through the informed-consent process. Physicians demonstrate respect for the autonomy of competent patients by accepting their informed decisions, whether or not they consent to medical treatment. It seems self-evident that without respect for informed refusal, the concept of informed consent is invalidated; “consent” would then merely be acquiescence of the patient to the physician’s recommendations. Adults are, therefore, allowed to make what physicians may sometimes consider unwise or foolish decisions. The physician does not have to agree with the patient, but neither can a physician be compelled to give inappropriate, bizarre, or substandard care. For a more complete discussion of informed consent, please refer to the informed consent chapter in this syllabus.

In order to give informed consent, a patient must have appropriate decision-making capacity, being able to understand the nature of the procedure; the risks, benefits, and alternatives, including that of doing nothing; and the probable outcomes of both acceptance and refusal of the proposed procedure. In addition, the decision must be made free of coercion. Coercion is present if the patient feels threatened, bullied, or subjected to irresistible pressure to make a decision that he or she would not otherwise make.

**Legal Precedents Concerning Jehovah’s Witness Patients**

Although legal decisions are not always synonymous with “ethical” ones, a review of some legal precedents regarding JWs and how they have changed provides some insights about how medical ethics has shifted in the United States from a paternalistic- and/or beneficence-based emphasis to one of respect for autonomy.

In 1964, two U.S. courts compelled transfusion for adult patients. In *Georgetown College v. Jones*, the court of appeals ruled that the “patient’s religion merely prevented her from consenting to a transfusion, not from receiving one,” and a transfusion was ordered. In *Raleigh Fitkin-Paul Morgan Memorial Hospital v. Anderson*, a pregnant JW was not permitted to refuse a necessary transfusion.

Over the past 40 years, however, U.S. courts have rejected these older cases and consistently upheld the rights of adult JWs to refuse blood, even when a transfusion would be life saving, and even when others, such as dependent children, may be indirectly affected. On the other hand, when the patient is a minor child and hospitals have sought court orders to give blood believed to be absolutely necessary to preserve life, such orders have usually been granted. Exceptions have sometimes been made when an older teenager is committed to his or her religion and seems to fully understand the scope and consequences of his or her decision. Legal precedents in many European countries have paralleled those in the United States.

**Specific Issues to Consider in Jehovah’s Witnesses**

I have identified what I believe to be the key issues in most cases involving JWs and others who refuse certain types of treatment on religious grounds. Examining these will allow us to incorporate the remaining principles of medical ethics into our decision-making process.

- Does the patient have appropriate decision-making capacity?
- Have all appropriate risks, benefits, and alternatives been explained?
- What is the proper role of surrogate decision makers?
- Is the patient truly a practicing JW and free of coercion?
- If so, what blood products will he or she accept, and what will he or she refuse?
- What are the pertinent medical issues?
- What are the capabilities of the surgical team?
- Is this an appropriate use of a limited resource, such as a donated organ?
- What are the health care provider’s rights and obligations?

**Appropriate Decision-Making Capacity**

All patients over the age of majority are assumed to have adequate decision-making capacity unless proven otherwise. Anesthesiologists can usually tell whether patients have decision-making capacity, which is generally present if the patient understands the nature of his or her illness/condition; the nature of the proposed procedure and its inherent risks, benefits, and alternatives; and the consequences of refusing treatment. In doubtful cases, a competency evaluation by a psychiatrist may be helpful.

**Explanation of Appropriate Risks, Benefits and Alternatives**

Aside from the usual explanation of anesthetic and surgical risks, other important issues must often be addressed. These include, but are not limited to, explaining the specifics of blood-conservation techniques, clarifying the risks of not accepting blood in the face of massive hemorrhage, and, in the case of organ transplants, ensuring that the patient understands that there are some blood cells in solid organs.

In nonemergent cases, there is often time to plan. Patients should be encouraged to discuss their options not only with the surgical team but also with the local hospital liaisons from their church (who can be a resource for physicians as well). Preoperative treatments with erythropoietin, iron supplements, or other methods to improve baseline hematocrit should be discussed. Consideration should also be given to intraoperative use of desmopressin (DDAVP) and any other measures that will minimize blood loss during the procedure.
Role of Surrogate Decision Makers

Can a Surrogate Decision-Maker Refuse Transfusion for an Incompetent Patient?

All JW's are encouraged to carry a durable power of attorney that explains in detail what their beliefs are concerning blood and blood products. If this is not available and it cannot be verified that the patient is a practicing JW, then physicians generally err on the side of transfusion if absolutely necessary. Consultation with hospital legal affairs or an organization's ethics committee may be helpful if the appropriate action remains unclear.

Can a Surrogate Decision-Maker Change a Plan Made by a Previously Competent Patient?

A surrogate decision maker’s task is to make decisions for the patient when the patient cannot make them for himself or herself. Ideally, surrogates are not supposed to express their own wishes but are supposed to make the same decision that a patient would make if able to do so. Once the patient's decisions are known, whether physicians agree or not, those decisions should stand unless new information becomes available that changes the previous decision into question. This can be particularly difficult if the patient has refused a treatment that the physician thinks is lifesaving, and the physician knows, believes, or even hopes that the surrogate would capitalize and allow the prohibited treatment. That is when physicians discover if they truly believe in patient autonomy.

Is the Patient Really a Practicing Jehovah’s Witness and Free of Coercion?

Patients should be free of coercion from health care providers and feel safe that their physicians will not abandon them, regardless of their personal choices. Additionally, providers must strive to ensure that the choices a patient makes are truly his or her own. It is not unusual for members of the JW church community, as well as family members, to flock to the bedside of a JW patient to support their loved one and protect him or her from receiving blood.

Sometimes the decisions JW patients express in the presence of family and church members are different from those they later express in private. Therefore, it is important that at some point before surgery and anesthesia, the patient have an opportunity to privately express his or her transfusion preferences to the anesthesiologist. This might be done in a preoperative holding area after the family and/or church members have been sent to the waiting room. The intent should not be to talk the patient into receiving blood, which would be itself coercive, but to ensure that his or her true wishes are known and followed. In the author's experience, on only two occasions in a 25-year career has a patient said that he or she really wants to receive blood in a lifesaving situation. If the patient does recant, it is then important to determine what, if anything, can or should be told to family members about whether blood products were given. Principles of patient confidentiality demand that specifics of treatment such as this only be discussed with the patient unless there is an agreement with the patient to do otherwise.

Acceptable Blood Products

Many JW's will have a health care proxy form already filled out in detail. Others will have one that is not very specific, and the details of choices left up to personal decision will need to be delineated. Surprisingly, in some cases the JW patient will not be very well informed about his or her choices, and you may have to walk him or her through the various choices. The hospital liaison may be helpful in this regard. For examples and explanations of these forms, see:


One should not assume that a patient professing to be a JW will not accept any blood products. In one study, for example, up to 10 percent of pregnant JW patients indicated that they would accept blood in an emergency. In the previous study, it was not clear if all of these patients had been baptized. In addition, members of a sect called Advocates for Jehovah's Witness Reform on Blood, (www.awrb.org) will accept blood and blood products in many situations. Nevertheless, in general, few practicing JW's will accept whole blood, packed red blood cells, plasma, platelet concentrates, or white blood cell transfusions. Stored autologous blood is not acceptable either because it is out of contact with the body at some point in time. Fractionated products, such as albumin, cryoprecipitate, cryo-poor plasma, and individual factors, are left to the discretion of the practicing Christian, as is organ and bone marrow transplantation.

Other “gray areas” include, but are not limited to, cell saver, acute normovolemic hemodilution (ANH), cardiopulmonary bypass, and renal dialysis. In these situations, The Watchtower has stated that if the blood is kept in continuous circuit with the body and is not stored for any length of time, then accepting its transfusion is a personal decision. Cardiopulmonary bypass and dialysis would almost always involve a continuous circuit. Cell saver and ANH do not necessarily involve a continuous circuit, but one can be created by flushing cell-saver bag and tubing with crystalloid and connecting the circuit to the patient’s intravenous line before blood collection. If, after collecting blood for ANH, the line to the collection bags remains connected to the patient, then it, too, is considered to be a continuous circuit.

Pertinent Medical Issues

A discussion of the ethical treatment of patients cannot help but overlap with a discussion of proper medical treatment. Although this article is not a treatise on the medical treatment of JW patients, it is important to remember that the principles of beneficence and nonmaleficence dictate that we make use of every available tool to prevent the need for a transfusion. In some cases, this may necessitate delaying a procedure until the patient is optimized. In addition to those tools already mentioned, a partial list includes erythropoietin (some formulas do contain albumin), iron therapy, limiting blood draws, and desmopressin (DDAVP).
As when assessing the surgical team (described in the next section), this is another area in which consulting an experienced center can be very helpful.

**Capabilities of the Surgical Team**

When large surgical procedures that may involve significant hemorrhage are involved, it is important to assess whether the surgical and anesthesia teams have the skills, experience, and resources necessary to perform the procedure on a patient who has limited their ability to care for him or her by refusing blood. The principle of nonmaleficence (i.e., doing no harm) might suggest refusing to do the surgery if the team does not have sufficient experience, modifying the surgical plan, or referring the patient to another center with more experience in bloodless surgery techniques. Some centers in the United States, for example, have created a niche in caring for high-risk JW patients. They can be found by contacting the official JW website (www.JW.org). Consultation with or referral to such centers may be useful.

**Appropriate Use of Limited Resources Such as Donated Organs**

In many routine surgical and anesthesia cases, distributive justice (i.e., fair allocation of scarce resources) is not a large consideration in the decision-making process. However, solid organ transplantation involves use of a very limited resource. Even centers that specialize in organ transplants in JWs have strict criteria for selecting the proper candidates for organ transplantation. If there is relative certainty that the preoperative status of the patient will mandate the use of blood products during the transplantation, then a JW patient probably should not be a candidate if he or she would refuse such transfusions. On the other hand, many potential candidates for liver transplant are not in severe failure but are at the top of the recipient list because of other complicating factors, such as hepatopulmonary syndrome, hepatocellular carcinoma, and hepatorenal syndrome. Many of these patients have normal coagulation and hemoglobins and have a reasonable chance of receiving a liver transplantation without transfusion, whether they are a JW or not. Such patients may be appropriate candidates for organ transplantation.

**Health Care Provider’s Rights and Obligations**

Many anesthesia providers believe a patient’s refusal of standard care in the operating room, such as blood transfusions, places them in an untenable position in which a seemingly irrational patient choice prevents them from fulfilling their professional obligations to provide lifesaving therapy. The American Society of Anesthesiologists has developed guidelines for the anesthesia care of patients with do-not-resuscitate orders or other directives that limit treatment that specify the following:

> When an anesthesiologist finds the patient’s or surgeon’s limitations of intervention decisions to be irreconcilable with one’s own moral views, then the anesthesiologist should withdraw in a nonjudgmental fashion, providing an alternative for care in a timely fashion.

[If such] alternatives are not feasible within the time frame necessary to prevent further morbidity or suffering, then in accordance with the American Medical Association’s Principles of Medical Ethics, care should proceed with reasonable adherence to the patient’s directives, being mindful of the patient’s goals and values.

In nonemergent situations, anesthesiologists have the right to excuse themselves from a patient’s care, as long as they are willing to refer the patient to another provider. This referral could even be to another medical center that has developed expertise in caring for JW patients, which may be desirable in certain situations, even when the anesthesiologist would be willing to care for the patient. If the situation is a life-or-death emergency with no time to make a referral, then the anesthesiologist is obligated to care for the patient, trying as much as possible to adhere to the patient’s wishes. However, if the anesthesiologist is concerned that he or she will not be able to comply, then the patient or surrogate should be informed.

These guidelines are similar to the Guidelines on Clinical Management of Jehovah’s Witnesses published by the National Health Service in Great Britain in 2005. European countries vary somewhat in the depth of physician’s obligation to honor a patient’s wishes not to be transfused. In France, for example, an autonomous patient’s wishes are generally respected, but the law gives leeway to physicians acting in the course of an emergency. In Germany, transfusion, even to save a life, would be in direct conflict with constitutional guarantees of autonomy, although it is uncertain how this would play out in court if challenged.

**Key Points**

The following are key points to remember when working with JW patients:

- Because of strongly held beliefs, most practicing JW patients will refuse transfusion of blood and many blood products.
- Respect for patient autonomy is the primary ethical principle applied in the United States, whereas the principle of beneficence is more strongly held in many other countries.
- Respect for autonomy supports the concept that competent adult patients have the right to refuse blood transfusions and any other therapy.
- Commitment to principles of beneficence and nonmaleficence require anesthesiologists to offer the best care available within the constraints of the patient’s wishes. This includes appropriate preoperative planning for adjunctive therapies and referring JW patients to other providers if the providers are more experienced and likely to perform the same procedures with less blood loss.
- Laws and practice in many other Western countries follow similar practices to those of the United States. The wishes of competent patients to forgo transfusions are generally respected, although individual countries may differ in whether and how strongly they penalize physicians who choose to transfuse rather than lose a patient’s life in the operating room.
References

<table>
<thead>
<tr>
<th>Type of Blood Product or Procedure</th>
<th>Action</th>
<th>Specific Concerns</th>
</tr>
</thead>
<tbody>
<tr>
<td>Whole blood</td>
<td>Refuse</td>
<td>NA</td>
</tr>
<tr>
<td>PRBCs</td>
<td>Refuse</td>
<td>NA</td>
</tr>
<tr>
<td>Plasma</td>
<td>Refuse</td>
<td>NA</td>
</tr>
<tr>
<td>Platelets</td>
<td>Refuse</td>
<td>NA</td>
</tr>
<tr>
<td>White cells</td>
<td>Refuse</td>
<td>NA</td>
</tr>
<tr>
<td>Cryoprecipitate</td>
<td>PD</td>
<td>NA</td>
</tr>
<tr>
<td>Cryo-poor plasma</td>
<td>PD</td>
<td>NA</td>
</tr>
<tr>
<td>Fractionated factors</td>
<td>PD</td>
<td>NA</td>
</tr>
<tr>
<td>Albumin</td>
<td>PD</td>
<td>NA</td>
</tr>
<tr>
<td>Erythropoietin</td>
<td>PD</td>
<td>Most erythropoietin is albumin coated and is a PD; darbepoetin contains no albumin</td>
</tr>
<tr>
<td>Recombinant factor VII</td>
<td>Accept</td>
<td>Though this is not made from blood, some may still object</td>
</tr>
<tr>
<td>Cell saver</td>
<td>PD</td>
<td>If kept in continuous circuit</td>
</tr>
<tr>
<td>ANH</td>
<td>PD</td>
<td>If kept in continuous circuit</td>
</tr>
<tr>
<td>Cardiopulmonary or venovenous bypass</td>
<td>PD</td>
<td>Continuous circuit rule</td>
</tr>
<tr>
<td>Renal dialysis</td>
<td>PD</td>
<td>Continuous circuit rule</td>
</tr>
<tr>
<td>Stored autologous blood</td>
<td>Refuse</td>
<td>Not in continuous circuit</td>
</tr>
<tr>
<td>Organ and bone marrow transplant</td>
<td>PD</td>
<td>NA</td>
</tr>
</tbody>
</table>

Abbreviations:
ANH = acute normovolemic hemodilution
NA = not applicable
PD = personal decision
PRBC = packed red blood cell
Case Scenario 1
The Child of a Jehovah's Witness
Robert D. Truog, M.D.
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A 7-year-old presents for resection of an abdominal tumor. The neoplasm is quite vascular, and extensive blood loss is anticipated. In the preoperative waiting area, the child's parents notify you that they are Jehovah's Witnesses and will not give permission for their child to receive blood or blood products.

- What should you discuss with the family?
- Would the situation be different if the patient were 17 years old? Why?
- Should a court order for blood administration be obtained preoperatively? How would you accomplish this in your hospital?
- What should be included in the documentation for informed consent for the anesthetic and surgery?

Instructor's Notes

This is a bread-and-butter case for a pediatric anesthesiologist, and everyone who practices in the field should be very clear about how to handle cases like this. Unfortunately, many anesthesiologists have been taught that Jehovah's Witnesses have the right to refuse blood transfusions without learning the exceptions to this rule. Although it is true that virtually any competent adult has the right to refuse even lifesaving medical treatments, there are some exceptions. For example, some judges have ordered the mothers of small children to be transfused against their will based on the view that the mother does not have the right to abandon her children by refusing a lifesaving treatment. In addition, legally incompetent minors are also excluded from the general rule on the grounds that the refusal of blood by the parents is not congruent with the child's best interests.

As discussed earlier, however, there are inconsistencies between the law and ethics of informed consent. Although the law holds that any unemancipated minor is legally incompetent, ethics would focus primarily on the decisional capacity of the child. If, for example, the patient were a mature 17-year-old who was deeply committed to the beliefs of his or her religion, then the ethically right approach would be to honor the patient's refusal. This would be acceptable from a legal perspective, however, only if a judge made an exception based on the mature minor doctrine.

At a practical level, how should the anesthesiologist proceed? The following is an outline of the process at the Children's Hospital in Boston (the procedure at other hospitals may vary, depending on the opinions of the hospital's administration and legal counsel). When caring for any non-emancipated minor, the anesthesiologist needs to inform the patient's parents that, in the event that blood or blood products would be lifesaving, a court order will be sought to administer these agents.

This communication must be clearly documented in the chart. Since giving permission for the administration of blood products is contrary to the tenets of their faith, it is not necessary for the parents to give written consent for the administration of blood products. Nevertheless, they should understand that a court order will be sought if they decide to proceed with surgery and the administration of blood products becomes potentially lifesaving.

If more than minimal blood loss is anticipated, should a court order for blood administration be obtained prospectively? The answer to this depends on the local circumstances. In many cases, hospital legal counsel will have a relationship with the local judiciary such that a court order can be obtained very quickly. In this case, especially when the need for a lifesaving transfusion is relatively unlikely, it is probably not necessary to obtain a prospective order. On the other hand, if there is a chance that the judge involved will not be familiar with the case law surrounding Jehovah's Witness patients, then waiting until the blood is needed could be a mistake. In any case, based on the strong legal precedent for giving blood in these situations, no child should be allowed to die because of parental refusal to consent for the administration of blood products.

Against this background, however, anesthesiologists should make every effort to administer an anesthetic in accord with the parents' religious beliefs. This means that the anesthesiologist should be skilled in all of the techniques that are currently available to minimize the need for transfusions, including hemodilution, cell-saver technology and even hormonal therapy to stimulate the production of red blood cells. Jehovah's Witnesses vary in exactly which techniques they will accept (e.g., there is controversy within the membership over whether cell saver techniques or the administration of albumin is acceptable), so the anesthesiologist should explore with the family the exact requirements of their beliefs. Again, however, while making all reasonable accommodation to avoid the need for a transfusion, no child of Jehovah's Witness parents should die for lack of transfused blood without the physicians seeking a court order to administer the blood against the parents' wishes.
Advance Directives

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A 55-year-old woman who is a Jehovah’s Witness is scheduled to undergo a redo aortic valve replacement. Before the procedure, she produces an advance directive document that states her categorical refusal to accept blood or blood products, even in the face of impending death. This directive document names her husband, who is not of the Jehovah’s Witness faith, as her health care proxy should she be unable to communicate her wishes. The procedure proceeds with difficulty, and the patient is postoperatively brought to the intensive care unit (ICU), actively bleeding and requiring increasing vasopressors and inotropes to achieve adequate perfusion. Further testing reveals a worsening shock picture with a rising serum lactate level. The patient’s husband is informed of these events, claims that he had indicated to his wife in a prior conversation that he would have trouble following her transfusion refusal request, and now requests that she receive a blood transfusion.

Providers of health care now are expected to respect advance directives, which are a set of instructions or guidelines about personal health treatment choices written or verbally communicated by a patient. Advance directives are generated by a patient with the purpose of affirming autonomy in anticipation of a circumstance when further decision-making capacity is lost. Advance directives have a legal and legislative origin from Quinlan in 1976,1 Cruzan in 1990,2 and the passing of the Patient Self-Determination Act in 1990 as an amendment of the Omnibus Budget Reconciliation Act of 1990. The advance directive as a legal right is recognized by all 50 states and the District of Columbia and imposes a corollary duty of action on the part of others, including friends, families, and health care providers. Historically, the living will, or the instruction directive, originated in 1967 and was put forward by the Euthanasia Society of America. Presently, these advance directives include the designation of a person or persons to make decisions in the place of the patient when the patient is unable. This is referred to as the proxy directive or durable power of attorney for health care. This person, so named by the patient, may be a spouse, adult child, sibling, close friend, or religious adviser but not a treating physician. People are also encouraged to select alternative proxies should the first be unwilling or unable to carry out the required duties. The person or persons designated as the health care decision proxy or proxies provide a critical element to the advance directive by turning the advance directive document into something fluid and adaptable to the unforeseen circumstance at hand. Most states will not allow a treating health care provider to act as the proxy for the patient because that relationship presents a serious conflict of interest as expressed in law and clinical ethics. At the bedside, certain domestic partner relationships fall outside of legally recognized unions and, in the absence of a formal proxy designation, challenges can arise. Legal directives and ethical principles can collide in several situations with respect to proxy appointments. As a practical solution, a “close friend” standard should reasonably suffice.

An unbefriended elderly patient whose closest relationship might be with a care provider under the patient’s employ presents further challenges. One solution uses the state to appoint a person to act as health care proxy. These state-appointed proxies will have no or limited knowledge of the patient they represent, and as such, the rationale behind not permitting the health care provider to act as proxy might be satisfied only in a legal sense. The intent is that the proxy has the capacity to speak in the particular voice of the particular patient.

The federal government, citizens, taxpayers, and insurance companies are all concerned with control of health care utilization and expenditure. Advance directives serve an interest in the prevention of unwanted and potentially costly interventions. In 1990, The Patient Self Determination Act was passed and was effective from December 1991. The purpose of this legislation was to direct a broad range of health care institutions to provide information to patients about advance directives when they were admitted to those institutions. The law did not include a mandate on individual physicians outside of a health care organization.

In 2009, America’s Affordable Health Choices Act (House of Representatives bill 3200) was proposed. Section 1233 of this bill would have authorized reimbursements for physicians who provided counseling to patients regarding the creation of advance directives. This provision was not included in the subsequent Patient Protection and Affordable Care Act of 2010 because of a political concern that such incentives for physicians would in effect create “death panels.”

Although advance directives are increasingly common, not all patients have created them or appointed proxies. In these circumstances, conversations among the health care provider, patient, family, and friends seek to create a treatment plan that reflects the patient’s stated and understood views combined with the medical facts at hand. Many states have adopted a version of the Physician Orders for Life-Sustaining Treatment (POLST) that was first developed in Oregon.3 The document provides a place for a physician to record the patient’s choice on matters of care, including do not resuscitate (DNR) orders and surrogate health care decision-maker designees. The POLST does not carry the same legal weight as advance directives, but it does provide a framework for conversations between health care providers and patients and can satisfy, in form, the ethical considerations on the direction of care.

Adult patients are presumed to have decisional capacity unless otherwise determined. Advance directives become active at the moment when it can be determined that the patient has lost decisional capacity. The determination of capacity is the responsibility of the physicians. Each state has different requirements, and the documentation standard also varies somewhat from state to state. Most states require two physicians to make independent evaluations and documentation in the determination of the loss of patient decisional capacity. Capacity, and the lack of it, exists on a continuum, and, in certain situations, patients can lose decisional capacity and later regain it. This is a particular problem for anesthesia providers. For instance, an elderly patient might lose decisional capacity during the same day that the surgeon states that he or she obtained consent for a
major treatment. The loss of decisional capacity is an extremely significant event for a person, and it is the responsibility of the proxy and the health care team to protect the interests of the person in question. All efforts should be directed at safeguarding patient capacity and attempting to restore it in circumstances where it is lost. The best, most thorough, and most thoughtful advance directive will never be as good as a patient with decisional capacity. The presence of an advance directive should not be considered sufficient and, therefore, reduce the energy of action needed to restore lost capacity to a patient capacity.

Recently, an unusual case of expression of an advance directive was described in the circumstance of a patient who placed a DNR tattoo on their body.4 The degree of seriousness of intention for a tattoo is ambiguous. This form of advance directive fails for several important reasons, and clinicians and prehospital emergency responders are not obliged to respect a DNR tattoo. Legal documents that specify resuscitation wishes, like the POLST, provide the certainty required because they are legally drawn up documents. A DNR tattoo, at best, might invoke a conversation, but in a situation where the tattooed person lacks capacity, the treatment initiated must err on the side of attempting as opposed to withholding. All medical directives must have the opportunity for revocation. Of course, a tattoo is a limited form of communication, and the process to remove a tattoo might be incomplete although the sentiment that generated it is long gone. Death cannot be reversed, although life can still consider a future death, if still so desired.

The question remains as to how to respond to a health care proxy who requests blood in contrast to the blood-transfusion restriction stated in the advance directive. The rule provides that the advance directive, like normal autonomous patient treatment decision making, should be reviewed under each relevant circumstance. Although the patient, an avowed Jehovah’s Witness, has written that she refuses a transfusion, what is to be made of her decision to appoint as her proxy her husband, who is not a Jehovah’s Witness and had indicated that he could not support her directive if so asked? It could be reasoned that the patient, in knowing her husband’s potential refusal of her request, brought personal biases to conversations and that these biases are or even contradictory to the written document. This is allowable because an advance directive is intended to simulate actual decision making on an ongoing basis rather than a mere frozen moment. The caveat on the part of the physician is to ensure that the proxy always acts in good faith and with an understanding of the distinction of personal decision making and surrogate decision making. Physicians need to acknowledge that they bring personal biases to conversations and that these biases are powerful to the degree that they might cause the physician to coerce rather than inform a patient. A strong bond among physician, patient, and proxy based on an honest, unbiased understanding of the uncertainties and the facts allows the best opportunity for generating a health care plan most meaningful to the patient.

The highest principle here is respect for autonomy, even though physician beneficence and nonmaleficence to prolong life would be expected in most situations.

If physicians are directed to act with beneficence and nonmaleficence, it begs the question of why patients feel the need to create advance directive documents. In the scenario presented here, and in all physician-patient interactions, it is clear that physicians act with intentionality and might draw on personal beliefs as opposed to patient wishes and beliefs in terms of what they do or advise. In a review of end-of-life practices by intensive care physicians in Europe, the geographic location of the ICU and the religion of the physician had a material effect on decisions regarding withdrawing, withholding, and active shortening of care at the end of life.6 Physicians needs to understand that they bring bias to every conversation and can spin information, resulting in a proxy making very different decisions. No real discussion can take place unless all assembled are apprised of all of the relevant facts, offered freely with neutral language.

In health care, advance directives are a set of instructions or guidelines about personal health treatment choices written or verbally communicated by a patient. They are the written extension of a moral contract between the physician and the patient. Advance directives are a legal authorization of care wishes and require a health care proxy to articulate how those wishes will be carried out in the clinical circumstance at hand. An alternative document is the POLST. This document allows a physician to record patient wishes, including statements on matters of resuscitation and the naming of health care proxy decision makers. In both classical advance directives and the POLST, a duly named proxy may direct care that is otherwise unspecified or even contradictory to the written document. This is allowable because an advance directive is intended to simulate actual decision making on an ongoing basis rather than a mere frozen moment. The caveat on the part of the physician is to ensure that the proxy always acts in good faith and with an understanding of the distinction of personal decision making and surrogate decision making. Physicians need to acknowledge that they bring personal biases to conversations and that these biases are powerful to the degree that they might cause the physician to coerce rather than inform a patient. A strong bond among physician, patient, and proxy based on an honest, unbiased understanding of the uncertainties and the facts allows the best opportunity for generating a health care plan most meaningful to the patient.

References
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