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Perioperative Advance Directives: Do Not Resuscitate in the Operating Room

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INTRODUCTION

Increasingly, surgeons, anesthesiologists, and nurses are confronted with the request to operate on patients with preexisting “Do Not Resuscitate” (DNR) orders (see Framing Case, later in this article). There is much uncertainty and confusion regarding the proper approach to managing advance directives for these patients. Many believe that DNR orders must be suspended before an operation, and there is concern that clinicians put themselves at risk when operating on a patient with an extant DNR order. There are both clinical and ethical reasons, in specific patients, to either suspend, or not suspend the DNR order in the perioperative period, and, most importantly, such decisions should be the subject of shared decision-making between surgeon and patient, or surrogate decision-makers. In this article, we describe the factors that contribute to these decisions, and current policy.

Attempts to resuscitate or re-animate the dead have been made since antiquity, with occasional success beginning in the eighteenth century. Modern approaches to reversing cardiac asystole or ventricular fibrillation date to the early 1950s, with external electrical pacing¹ and alternating current defibrillation,² followed a few years later by DC countershock.³ Careful reading of these publications reveals that although defibrillation successfully reversed the electrical anomaly, at least transiently, few patients (only 1 of 4 in the initial article by Zoll¹) survived to hospital discharge. Further, because there were inadequate techniques for effective ventilation and oxygenation, defibrillation was successful only when initiated soon after onset of the arrhythmia. For this reason, it was hypothesized that cardiac arrest in the operating room (OR), where there is continuous observation and monitoring of the patient, would be most amenable to defibrillation and a successful outcome.

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OUTCOMES OF RESUSCITATION

Current data on in-hospital cardiopulmonary resuscitation (CPR) are not much improved since the early work of Zoll² and Lown and colleagues.³ Although approximately 40% of patients who undergo CPR in the hospital will have return of spontaneous circulation (ROSC),⁴ only 10% will survive to hospital discharge.⁵ Of those, only 25% will survive in excess of 5 years, and a significant percentage will be confined to chronic care facilities or have neurologic disabilities. Younger, previously healthy patients, those with witnessed arrest, and initial rhythm of ventricular fibrillation tend to do better.^{6,7} Nonetheless, the current public perception of CPR, fueled by TV medical dramas, is that it is frequently (or even usually) successful, allowing most patients to both survive and return to a normal neurologic status.

As noted, electrical defibrillation was initially proposed for a restricted group of rhythms and settings, such as cardiac arrest in the OR. Through the 1960s, however, with the development of more standardized techniques, CPR became routine therapy for any patient who died in hospital. To avoid confusion and distress as to which patients should or should not undergo CPR, the American Medical Association recommended in 1974 that decisions not to resuscitate be formally entered in patients' progress notes and communicated to all attending staff.⁶ In 1976, the first proposed hospital policy regarding "orders not to resuscitate" was published.⁸ This policy pointed out the "growing concern that it may be inappropriate to apply technologic capabilities to the fullest extent in all cases and without limitation." Rabkin and colleagues⁸ also pointed out that "it is the general policy of hospitals to act affirmatively to preserve the life of all patients, including persons who suffer from irreversible terminal illness," and thus mandated attempts at resuscitation in all patients without a DNR order. This created the perverse situation in which resuscitation became the sole medical intervention requiring a written order, and usually patient consent, *not* to perform.⁹

INDICATIONS FOR DO NOT RESUSCITATE ORDERS

When might it be appropriate for a patient, or the patient's surrogate or physician to consider an order not to resuscitate? Respect for patient autonomy recognizes the patient's right to refuse unwanted interventions, and to provide guidance consistent with the patient's goals of care. Cardiac arrest is the final common pathway of the dying process. A DNR order should be merely one, and not the most important, decision that patients and families make in defining their preferences for end-of-life care.¹⁰ When an attempt at resuscitation merely prolongs the process of dying, rather than contributing to meaningful (in the opinion of the patient) life, it cannot be seen as consistent with the ethical principle of beneficence. The vast majority of patients who die in hospital do so with an existing DNR order, and review of these cases failed to find any ethical objections in those patients.^{11,12} Briefly, there are 3 situations in which a DNR decision is appropriate¹³:

1. When a patient makes an informed decision to decline CPR
2. In those situations in which CPR is known to be ineffective

3. When the physician and patient (or surrogate, if the patient lacks capacity) recognize the burdens of CPR would outweigh the benefits.

For patients or families to make such decisions, it is crucial for them to have a realistic view of their disease process, the likely outcome of CPR, the chance for ROSC and survival to hospital discharge and the potential morbidity of attempts at CPR, including anoxic brain injury and physical trauma. Indeed, when patients are better informed about CPR procedures and outcomes, fewer are inclined to elect CPR.¹⁴

An ongoing controversy regarding DNR is the dilemma created when physicians and other clinicians believe CPR to be nonbeneficial, but the patient, or family, insists on resuscitation. Many states permit physicians to institute unilateral DNR orders, with appropriate notification to the patient or surrogate, but some require the order to be rescinded if the patient or family objects.¹⁵ It has also been suggested that an attempt at resuscitation may provide “symbolic comfort” to the family, even when certain to fail, or likely to cause physical discomfort to the patient.¹⁰

When evaluating the place of perioperative DNR orders, it is important to consider whether cardiac arrest and resuscitation in the OR, interventional radiology suite, or cardiac catheterization laboratory, is different from cardiac arrest elsewhere in the hospital. Both CPR and defibrillation were initially developed for use in the OR, and then spread to other venues in and outside the hospital. Cardiac arrest in the OR may be related to the patient’s underlying disease process, that is, the reason for the DNR order in the first place, or it may be related to an anesthetic or surgical complication. Resuscitative efforts in the OR generally have better outcomes than elsewhere in the hospital (after all, the patient is being continuously monitored, with an anesthetist standing by), and when the arrest is attributable to the anesthetic, the recovery rate can be as high as 92%.¹⁶ In addition, many of the usual resuscitative maneuvers (intubation, ventilation, inotropic support) are a routine part of anesthetic care. The only additional features of CPR are chest compression and defibrillation. Whether a patient wishes an attempt at resuscitation it is not a 1-time decision; it should be reassessed when there is a change in a patient’s status, a new diagnosis, or in their required level of care, which certainly includes the OR.¹⁷ Because the likelihood of success with resuscitation in the OR is higher than elsewhere, the calculation of risk and benefit is different, and the patient may come to a different decision regarding the value of DNR in the perioperative period. DNR does not imply that a patient wishes to die; rather, the patient may believe that the burdens of attempted resuscitation, or of surviving after resuscitation with a greatly diminished quality of life, does not comport with their preference for their end of life. A rapidly reversed cardiac arrest in the OR may portend a better postarrest state than when CPR is initiated on an unmonitored patient after an unknown duration of hypoxia.

A frequent question is why one would propose an operation for a patient with a DNR order. It is important to emphasize that DNR means only that; do not resuscitate. It does not in any way mean “do not treat,” and there are many palliative procedures associated with different levels of procedural risk and requiring various degrees of anesthesia that may contribute to pain relief, quality of life, or longevity, despite an underlying illness leading to the DNR.

Such procedures may include tracheostomy, gastrostomy, stenting of ureters to relieve obstruction, fixation of pathologic fractures, or relief of malignant intestinal obstruction. As with any other operation, DNR or not, careful consideration and discussion of risks and potential benefit is critical to avoid unnecessary suffering in patients with a limited life span.

REQUIRED RECONSIDERATION

From an ethical viewpoint, it is inappropriate to require universal suspension of a DNR order before a patient can have an operation, or anesthetic, as it violates the patient's right to self-determination. Further, creating a situation in which a patient must rescind the DNR to undergo a desired procedure is coercive. The first official policy addressing DNR in the OR was promulgated by the American Society of Anesthesiologists (ASA) in 1993,¹⁸ and amended several times since.¹⁹ Similar policy statements were subsequently issued by the American College of Surgeons (ACS)^{20,21} and the Association of Operating Room Nurses (AORN).²² These policies agree that mandated suspension of a DNR order is not appropriate, but that a discussion with the surgeon, anesthesiologist, and patient/surrogate should take place to provide an explanation to the patient about the issues particular to the administration of anesthesia and the proposed procedure, and to ascertain the patient's wishes regarding the DNR order. The patient may then choose to suspend the DNR order, keep the DNR in place, or modify the DNR in some way (eg, if caused by an easily remediable problem, please attempt resuscitation; otherwise, please refrain from such attempts). It also should be determined the duration of the change in status, if any, such as when the patient leaves the post-anesthesia care unit, or has recovered from the anesthetic and/or operative procedure. This discussion must then be documented in the medical record, so that all members of the treatment team understand the parameters of care for the particular patient. There may be members of the OR team who have moral or ethical objections to participating in the care of the patient with a DNR in place; arrangements need to be in place to permit such individuals to withdraw from the case, providing an alternative team member in a timely fashion.^{19,21,22}

Despite uniform agreement among the responsible societies 25 years ago, the adoption of these policies for "required reconsideration" has been slow. Between 1991 and 1997, the number of anesthesiology residency programs responding to a survey, and subsequent follow-up, noted the percentage that had DNR policies, and mandated suspension, dropped from 81% to 26%.²³ A significant number of those still with mandated suspension had not revised their policies following the ASA recommendations. Today, still, it is not uncommon for surgeons to be told by OR or anesthesia staff that they need to suspend the patient's DNR before they can come to the OR, even in hospitals that have clear policies to the contrary.

PROCEDURE-DIRECTED AND GOAL-DIRECTED INTERVENTIONS

The discussion and documentation of the decisions about resuscitation and end-of-life care may be documented in several ways. Unfortunately, all too often, the order not to attempt resuscitation is written simply as "DNR." This, obviously, provides little guidance to caregivers as to the patient's preferences and values. There are, in general, two more prescriptive approaches to these discussions, termed "procedure-directed" and "goal-

directed” advance directives. Each has its own advantages and drawbacks. The procedure-directed approach specifies, in a check-box, or menu-type form specifically which procedures (eg, intubation, medications, chest compressions, defibrillation) the patient or surrogate believes are, or are not, appropriate. Such a form is particularly useful in the setting in which the staff who are faced with a patient in extremis do not know the patient intimately, where there are frequent shift changes, and where the on-call staff are not the patient’s primary physician. The form is clear, straightforward, and easily interpreted by whoever is managing the patient (or, in a worst-case scenario, responding to the code). This approach is without situational nuance, however, and does not explain what sort of result is important to the patient; only what techniques might be used to get there.²³

The alternative approach, termed “goal-directed,” is to discuss, and document, the patient’s detailed goals of care, allowing the patient’s physicians to determine the best ways to achieve those goals.²³ This method of determining appropriate resuscitative measures requires the care team to have a detailed understanding of the patient’s wishes and values, and is thus not useful in the setting of rapid team handoffs. It requires more time to do properly than the procedure-directed checklist, but often provides a deeper insight into the patient/surrogate values and preferred outcomes. In the OR, however, where both the attending surgeon and attending anesthesiologist have had the opportunity to have a real discussion of goals of care with the patient or the patient’s surrogate, a goal-directed approach will provide more flexibility, and more accurately provide the care the patient would prefer. For example, a patient might state that he or she most fears survival with a severe cognitive deficit. The operative team would then recognize that the patient would accept resuscitative efforts requiring only a brief period to restore circulation, but not extensive interventions that would sustain life, but at the cost of almost certain anoxic brain injury. This would be more respectful of the patient than a statement or checklist noting “no defibrillation.”

SUMMARY

The decision not to attempt resuscitation can be seen as merely one of a constellation of interventions at the end of life that should be considered to respect a patient’s beliefs and right to autonomy. Some of those interventions include palliative surgical procedures requiring anesthesia, thus creating the dilemma of how to deal with the simultaneous administration of an anesthetic in a patient with a DNR order. The mandated universal suspension of DNR orders in the perioperative period is not respectful of the patient’s autonomy, and often not appropriate to the clinical situation. On the other hand, cardiac arrest in the OR may result from different reversible or iatrogenic events, including anesthesia itself or intraoperative complications, and resuscitation in that setting may have superior outcomes. All of the professional organizations involved in providing treatment to patients in the OR (ASA, ACS, and AORN) have repeatedly promulgated guidelines calling for the establishment of hospital policies requiring reconsideration of DNR orders before operation, and documentation of the discussion in the medical record. Although procedure-directed DNR protocols are simpler to enact, and less ambiguous in the setting of multiple caregivers and frequent handoffs, the goal-directed approach gives surgeons and anesthesiologists more flexibility in providing the care that patients prefer, and is best suited

to the operative setting. More extensive education is required of OR professionals and staff to resolve confusion about the appropriate care of the perioperative patient with a DNR order, and to avoid the misconception that such orders must be suspended in the perioperative period.

FRAMING CASE

Mrs. J is a 56-year-old woman who was diagnosed with locally advanced signet ring adenocarcinoma of the cecum in 2002. She underwent a right colectomy with partial cystectomy and adjuvant chemotherapy. In 2009, she underwent radical cystectomy with ileal conduit for localized bladder recurrence with additional adjuvant chemoradiation.

In 2018, she was admitted for a partial small bowel obstruction (SBO) due to tumor recurrence (biopsy proven). It resolved with nasogastric tube decompression. She was discharged to a rehabilitation facility. While there, she completed a MOLST form (Medical Order for Life Sustaining Therapy, sometimes also called a "POLST"; an advance directive indicating that she did not want intubation or resuscitation).

She has been receiving third-line chemotherapy as an outpatient but was just readmitted with a complete SBO. Her surgical oncologist thinks she can perform a laparoscopic lysis of adhesions and ileostomy. Given your expertise in palliative care, you are called to help the surgical/anesthesia/nursing team decide how best to address her advance directives.

1. What options do the patient and surgical/anesthesia/nursing team have?

Options include keeping the advance directive in place during surgery, canceling the advance directive, or suspending the advance directive for a specified period of time. Required reconsideration is the recommended review process for this scenario. Procedure-directed or goal-directed advance directives can be kept in place.

2. If consensus cannot be reached, who gets to make the final decision?

The patient or surrogate (if the patient lacks decision-making capacity) has the final word regarding perioperative advance directives. However, the surgeon/anesthesiologist/nurse cannot be forced to violate their conscience or provide care that is substandard or unsafe (such as performing an exploratory laparotomy with local anesthesia only). Providers whose conscience will not allow them to participate in the operation/procedure are obligated to recuse themselves and find an appropriate substitute.

3. What resources are available at your institution to help resolve this type of situation?

Palliative care or ethics consultation can be a valuable resource. Palliative care specialists (including surgical palliative care providers) also can help explore a variety of surgical and nonsurgical treatment pathways.

4. What recommendations have professional societies (ACS, ASA, AORN) provided?

The ACS, ASA, and AORN have all explicitly stated that it is inappropriate to automatically suspend a patient's advance directive (DNR). Required reconsideration is the standard of care.

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KEY POINTS

- Important to establish a patient's goals of care before an invasive, operative procedure.
- The Do Not Resuscitate (DNR) discussion is not an aim in itself, but should be the last phase of a goals of care discussion.
- DNR should not be automatically suspended before an operation, but there should be a discussion and a decision by the patient about intraoperative resuscitation preoperatively.
- Palliative operations can be justified in patients with a standing DNR.