

DNR in the OR and Afterwards

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The Case

An 85-year-old woman with dementia took a mechanical fall at her skilled nursing facility (SNF) and suffered a fractured femur. After initial evaluation in the emergency department, the patient was admitted to a surgical unit where the providers contacted the niece, the patient's health care proxy, to discuss decision making. The providers confirmed the patient's wishes, including her desire not to be resuscitated (a preference that was articulated in her advance directive, which accompanied the patient to the hospital). The niece agreed that the patient would be a full code during surgery (in other words, the DNR order would be suspended), but then the DNR order would apply for the remainder of the hospitalization.

The patient's operative course was uneventful and she returned to the surgical unit for routine postoperative care. Several days after the surgery, the nurse who cared for the patient at the time of admission noted her code status to be documented as 'full code'—quickly realizing that the patient's DNR wishes had not been reinstated in the chart. Fortunately, the error led to no inappropriate resuscitative measures, but the event did generate a hospital review of DNR orders around surgery.

The Commentary

When a patient with a “do not resuscitate” (DNR) order undergoes surgery or conscious sedation, there may be a tension between wanting to provide beneficial interventions and respecting her informed choices.^(1,2) When the patient's vital functions are deliberately depressed by anesthesia, several interventions are routinely used that also are employed during “resuscitation,” such as vasopressors and mechanical ventilation. If a patient has a DNR order, an anesthesiologist might need to withhold such interventions and even reduce the level of anesthesia and analgesia to ensure stable vital functions; either situation could compromise the outcomes of surgery. Therefore, many physicians would like to “suspend” DNR orders in the operating room to avoid these predicaments. This approach is supported by the fact that CPR is much more successful in the operating room than elsewhere in the hospital. In one study, 65% of patients who suffered a cardiopulmonary arrest in the operating room survived to discharge, and 92% of those whose arrest was caused by anesthesia survived.⁽³⁾ After being informed of these differences in

both approach to and outcomes of life-sustaining interventions in the operating room versus other clinical situations, many patients accept resuscitative measures in the operating room and the immediate postoperative period. Although most patients give physicians considerable discretion to determine what interventions are needed, some may want to forego certain life-sustaining interventions (eg, chest compressions or 'shocks' to the heart) or limit interventions when their goals of care are unlikely to be achieved.⁽⁴⁾ Similar issues arise when a patient with a DNR order undergoes conscious sedation, for example, for endoscopy or bronchoscopy.

In this case, the patient's surrogate agreed to suspend the DNR order, but it was not reinstated after surgery. Why did this failure occur, and how might it be prevented? It is useful to break this question into several components.

When should DNR orders be reinstated? After the patient has recovered from anesthesia, the clinical conditions that justify "suspending" the DNR order are no longer present. Hence, it often makes sense to reinstate the DNR order when the patient leaves the postoperative recovery room, when the patient's clinical condition is stable.⁽²⁾ However, in some clinical situations, continuing to provide life-sustaining interventions might be reasonable. For example, a patient might require mechanical ventilation or vasopressors for longer than anticipated but still have an excellent prognosis for full recovery.

Who should reinstate the DNR order? Although it makes sense for the physician or service that modified the DNR order to do so, this may not be practical. For instance, the anesthesiologist may suspend the DNR order, but transfer primary responsibility when the patient is discharged from the postoperative recovery room. If an intensive care unit physician assumes primary responsibility for a patient requiring mechanical ventilation, she may not know about the original DNR order.

How can physicians be reminded to address DNR orders in the perioperative period? Because of a lack of published studies, improvements need to be extrapolated from quality improvement projects on other topics and on anecdotal experience. System interventions can help overcome the limitations of human memory and attention. Developing a critical pathway can identify the key steps to avoid cases like the one presented. For instance, identifying surgical patients who have a DNR order may be a challenge if the patient is new to the hospital or surgical center. Electronic medical records can help alert physicians about a patient's DNR order before surgery and require them to reconsider this order at specified times, such as at a preoperative anesthesia visit, on transfer from the postoperative recovery room, and every few days thereafter while in the intensive care unit. The use of checklists for specific life-sustaining interventions within a DNR order may be particularly valuable in the postoperative setting ^(2,5) to reduce misunderstandings over what interventions comprise "resuscitation." Finally, as institutions create policies and procedures to ensure high quality "handoffs," the patient's DNR status should routinely be one element of such handoffs.

In addition to system-wide interventions, educational interventions directed at individual physicians might help promote the importance and careful attention that DNR orders deserve. Some surgeons or anesthesiologists may believe that DNR orders should automatically be suspended in the operating room without the need for discussion with patients or surrogates. However, professional guidelines agree that physicians should discuss these issues with patients or surrogates and be guided by their informed

preferences and choices.(6-9) The [Table](#) below offers suggestions for holding such discussions with patients or with the surrogates of patients who lack decision-making capacity. Educational interventions should also focus on improving the skill of discussing perioperative DNR orders with patients, particularly given the complexities involved in decision making. These educational programs would be particularly important for new staff members or trainees.

Finally, hospitals should consider back-up systems for essential but difficult parts of a critical pathway for perioperative DNR orders. This might involve having an experienced anesthesiologist or nurse specialist available by pager to help surgeons and anesthesiologists who are not comfortable discussing DNR orders with patients.

In summary, routine DNR orders that can be applied to the “standard” patient are unrealistic in light of the wide range of situations in which patients with DNR orders undergo anesthesia and conscious sedation. Instead, the focus should be on requiring DNR orders to be reconsidered at critical events during a patient’s hospitalization. Once the issue is brought to the physician’s attention, she can make an individualized decision, taking into account the patient’s clinical situation, specific preferences, and desired goals for care. An informed patient’s decision to suspend a DNR order for a procedure should be respected, and systems should focus on ensuring that reinstatement of the DNR order occurs at the appropriate time after surgery.

Take-Home Points

- When a patient with a DNR order undergoes anesthesia or conscious sedation, the DNR order needs to be reconsidered at key times during the admission.
- Discussions with patients or their surrogates are essential to elicit the patient’s goals and preferences.
- Computerized reminders can help physicians carry out these re-evaluations.
- Checklists of life-prolonging interventions may clarify what specific interventions are to be carried out or withheld.

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References

1. Lo B. Resolving Ethical Dilemmas: A Guide for Clinicians. 3rd ed. Philadelphia, PA: Lippincott Williams & Wilkins; 2005:117-124.
2. Truog RD, Waisel DB, Burns JP. Do-not-resuscitate orders in the surgical setting. *Lancet*. 2005;365:733-735. [\[go to PubMed\]](#)
3. Olsson GL, Hallen B. Cardiac arrest during anesthesia. A computer-aided study in 250,543 anaesthetics. *Acta Anaesthesiol Scand*. 1988;32:653-664. [\[go to PubMed\]](#)
4. Clemency MV, Thompson NJ. Do not resuscitate orders in the perioperative period: patient perspectives. *Anesth Analg*. 1997;84:859-864. [\[go to PubMed\]](#)

5. Guarisco KK. Managing do-not-resuscitate orders in the perianesthesia period. J Perianesth Nurs. 2004;19:300-307. [\[go to PubMed\]](#)
6. Veterans Health Administration. May Do-Not-Resuscitate (DNR) Orders Be Suspended for Surgery? EthicsRX. January 2005. Available at: http://www.va.gov/ETHICS/docs/rx/EthicsRx_20050101_Suspending_DNR_Orders_For_Surgery.pdf. Accessed July 24, 2006.
7. American Society of Anesthesiologists. Ethical Guidelines for the Anesthesia Care of Patients with Do-Not-Resuscitate Orders. Available at: <http://www.asahq.org/publicationsAndServices/standards/09.html>. Accessed August 7, 2006.
8. American Medical Association. E-2.22 Do-Not-Resuscitate Orders. Available at: http://www.ama-assn.org/apps/pf_new/pf_online?f_n=browse&doc=policyfiles/HnE/E-2.22.HTM. Accessed August 7, 2006.
9. American College of Surgeons. [ST-19] Statement on Advance Directives by Patients: “Do Not Resuscitate” in the Operating Room. Available at: http://www.facs.org/fellows_info/statements/st-19.html. Accessed August 7, 2006.

Table

Suggestions for discussing DNR orders for surgery

- “Giving anesthesia can be very similar to resuscitation. For example, drugs to support blood pressure and measures to maintain breathing are used in the operating room and in resuscitation. In the operating room, these treatments allow the anesthesiologist to keep you sedated and pain-free during the operation, while sustaining your breathing and circulation.”
- “If a patient’s heart stops in the operating room, resuscitation is much more likely to be successful than in other circumstances.”
- “I’d like to discuss with you what level of resuscitation will be provided in the operating room or how care might be limited.”

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