



Fast Facts Core Curriculum

Ethics

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FAST FACTS AND CONCEPTS #8
MORPHINE AND HASTENED DEATH**Charles F von Gunten MD**

Question: What is the distinction between the use of morphine at the end of life to control symptoms and euthanasia/assisted suicide?

Case Scenario: An 83 year old former industrial worker has been hospitalized because of severe pain. He has pancreatic cancer with metastases to liver and lung. He has severe abdominal pain, and opioid therapy with morphine is recommended for pain relief.

Main Teaching Points

1. Many physicians inaccurately believe that morphine has an unusually or unacceptably high risk of an adverse event that may cause death, particularly when the patient is frail or close to the end of his or her life. In fact, a large study of opioid use at the end of life from the US National Hospice Outcomes Project, as well as a systematic review of various other countries, found no difference in survival with absolute opioid dose or change in opioid dose. Furthermore, morphine-related toxicity will be evident in sequential development of drowsiness, confusion, then loss of consciousness before respiratory drive is significantly compromised.
2. Many physicians inappropriately call this risk of a potentially adverse event, a *double effect*, when it is in fact a secondary, *unintended consequence*. The principle of double effect refers to the ethical construct where a physician uses a treatment, or gives medication, for an ethical intended effect where the potential outcome is good (eg, relief of a symptom), knowing that *there will certainly be* an undesired secondary effect (such as death). An example might be the separation of conjoined twins knowing that one twin will die so that the other will live. Although this principle of “double effect” is commonly cited with morphine, in fact, it does not apply, as the secondary adverse consequences are unlikely.
3. When offering a therapy, it is the *intent* in offering a treatment that dictates whether it is ethical medical practice:
 - a. if the *intent* in offering a treatment is *desirable* or *helpful to the patient* and the *potential outcome good* (such as relief of pain), but a potentially adverse secondary effect is undesired and the potential outcome bad (such as death), then *the treatment is considered ethical*
 - b. If the *intent* is *not desirable* or *will harm the patient* and the *potential outcome bad*, the *treatment is considered unethical*
4. All medical treatments have both intended effects and the risk of unintended, potentially adverse, secondary consequences, including death. Some examples are total parenteral nutrition, chemotherapy, surgery, amiodarone, etc.
5. Assisted suicide and euthanasia are not examples of “double effect.” The intention in offering the treatment in assisted suicide and euthanasia is to end the patient’s life.
6. If the intent for using morphine in the scenario is to relieve pain and not to cause death, and accepted dosing guidelines are followed:
 - a. the treatment is considered ethical,
 - b. the risk of a potentially dangerous adverse secondary effects particularly hastening death is *minimal*, and
 - c. the risk of respiratory depression is vastly over-estimated.

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FAST FACTS AND CONCEPTS #55
DECISION MAKING CAPACITY**Robert Arnold MD**

Background Informed consent is based on the principle that patients should be allowed to make decisions for themselves. Decision making capacity thus serves as a gatekeeper concept. Patients who have it can make decisions for themselves; conversely, a surrogate is needed for patients who lack decision-making capacity. *Competency* is a legal term referring to a decision made by judge, although a physician's opinion carries considerable weight in a competency hearing. In contrast, *decision making capacity* ('decisionality') refers to a physician's determination, based on clinical examination, that a patient is able to make medical decisions for him- or herself. Most state Power of Attorney for Health Care documents require a physician (or similarly qualified individual such as a psychologist) to document that a patient has lost decision making capacity for the surrogate to become the legal agent for medical decisions.

Assessing decision making capacity

- To be deemed 'decisional,' a physician must be satisfied that a patient is able to do three tasks:
 - Receive information (e.g. must be awake, but not necessarily oriented x 4),
 - Evaluate, deliberate, and mentally manipulate information, and
 - Communicate a treatment preference (e.g. the comatose patient by definition is not decisional).
- Physicians should look for:
 - **Understanding.** Does the patient adequately understand the information about the risks, benefits, and alternatives of what is being proposed? The patient does not have to agree with your interpretation, but should be able to repeat what you have said. Ask, *Can you repeat to me the options for treating X I have just discussed with you? Can you explain to me why you feel that way? What is your understanding of what will happen if we don't do Y?*
 - **Logic.** Is the logic the patient uses to arrive at the decision "not-irrational"? One wants, as much as possible to make sure the patient's values are speaking, rather than an underlying mental or physical illness. Note: Severe depression or hopelessness will make it difficult to interpret decisionality; consult psychiatry for assistance with this or other complex cases.
 - **Consistency.** Is the patient able to make a decision with some consistency? This means not changing one's mind every time one is asked. Is the decision consistent with the patient's values? If there is a change in the patient values, can the patient explain the change?

Decision making capacity is contingent

- **Task specific.** Deciding if the patient is decisional means weighing the degree to which the patient has decision making capacity against the objective risks and benefits to the patient. Some decisions are more complex than others, requiring a higher level of decision-making capacity. Thus a moderately demented patient may be able to make some decisions (e.g. antibiotics for pneumonia) but not others (e.g. chemotherapy for metastatic lung cancer). This sliding scale view of decisionality holds that it is proper to require a higher level of certainty when the decision poses great harm.
- **Time specific.** When encephalopathic a patient may not be decisional; after treatment decisionality may be regained.

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**FAST FACTS AND CONCEPTS #115
DECLARING BRAIN DEATH: THE NEUROLOGIC CRITERIA**

Amal Puswella, Mike DeVita, Robert M Arnold MD

Background This *Fast Fact* reviews the details of declaring death based on neurological criteria. In 1980, the Uniform Determination of Death Act (UDDA) was created which stated that “An individual who has sustained either 1) irreversible cessation of circulatory and respiratory function, or 2) irreversible cessation of all functions of the entire brain, including the brainstem, is dead. A determination of death must be made with accepted medical standards.” The UDDA did not define “accepted medical standards,” and so the American Academy of Neurology published guidelines in 1995, and updated them in 2010. Despite these national guidelines, there is still considerable variability in local institutional guidelines.

Determining death by neurologic criteria involves two steps:

- **Step 1:** Rule out reversible causes of unconsciousness: sedative medication, neuromuscular blocking agents or hypothermia.
- **Step 2:** Rule out the presence of cortical activity and brainstem reflexes using clinical exams/tests. *The exact tests done may vary by institution and one should check with their own institution’s policies. Brain death exams are typically completed by neurologists, neurosurgeons, and critical care physicians.* For a person to be dead by brain death, typically all of the following tests must show lack of brain function:
 - No spontaneous movement and no movement in response to painful stimuli (movement due to spinal reflexes are acceptable).
 - No seizures, decerebrate or decorticate posturing, or dyskinetic movements.
 - Absent cranial nerve reflexes including pupillary response to light, corneal reflexes, oculocephalic reflex, caloric response, facial movement to a noxious stimulus, and gagging and cough with suctioning.
 - *Caloric testing* is done by first ensuring the auditory canal is clear and the tympanic membranes are intact. The head is elevated to 30°, 50 ml of ice water is slowly infused into the canals, and the eyes are observed for one minute. The normal response in an awake patient is tonic deviation of the eyes toward the cold stimulus followed by nystagmus back to the midline; the normal response in a comatose patient with an intact brainstem is tonic deviation of the eyes toward the cold stimulus without nystagmus; in brain death, the eyes do not move. Both ears must be tested with an interval of several minutes in between.
 - **Note:** At some institutions other clinical tests are done before a formal *apnea test* (see below). For example, some require documentation of no vagal nerve activity – an atropine test is used. The patient is given 2 mg IV atropine. In the dead patient, the parasympathetic outflow is non-functioning and the heart rate will not change (<10 beats/minute).
 - Absence of central respiratory drive is assessed using the *apnea test* to see if a rise of CO₂ provides a stimulus to breathe. The patient is ventilated with 100% oxygen for 10-20 minutes and a baseline blood gas is obtained. The ventilator is then removed while 100% oxygen is delivered; O₂ saturation is continuously assessed. A follow-up ABG is done after 5-10 minutes. If the PaCO₂ rises past 60mm Hg (or >20 mm Hg above baseline), and no breathing efforts are observed, the respiratory center is not functioning. The test should be aborted if the patient develops hypoxemia (also indicates no respiratory drive), hypotension, or arrhythmias.

Adjunctive or confirmatory tests are needed in complex clinical situations such as uremia or hepatic encephalopathy, when apnea testing cannot be performed, when the primary brain insult is infratentorial, or if required by the local institutional brain death policy.

- Electroencephalogram: must be isoelectric, which is difficult in the ICU due to electrical artifact).
- Transcranial Doppler: intracranial arteries demonstrate either absence of diastolic flow, or small systolic peaks.
- Somatosensory Evoked Potentials: bilateral median nerve stimulation demonstrates an absence of the N20-P22 response.
- Intracranial Pressure: sustained, elevated ICP within 10 mmHg of mean arterial pressure.
- Tests of cerebral blood flow: if there is no cerebral blood flow then there is no brain function and death may be determined based on this test alone. Specific tests include cranial radionuclide angiography and conventional contrast angiography.

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FAST FACTS AND CONCEPTS #164
INFORMED CONSENT IN PALLIATIVE CARE – PART I

David E Weissman MD and Arthur Derse MD, JD

Background Informed consent is frequently misunderstood as something that only applies to research trials or a form that a patient signs to indicate understanding and agreement when undergoing an invasive procedure. This *Fast Fact* reviews the legal basis for informed consent. *Fast Fact* #165 will discuss common myths about informed consent in the care of seriously ill and dying patients.

Definition Informed consent is a process, not a signature, whereby a physician discloses key information to help patients make a choice among healthcare options. The informed consent process requires that three conditions be met: a) the patient is able to make a voluntary choice, b) the patient is informed (see below), and c) the patient has the capacity to make medical decisions.

Legal Standard The legal standard of informed consent varies between states. Some use: *what a reasonable patient would want to know*; in other states the standard is, *what a reasonable physician should provide*. A failure to meet the legal standard may meet the threshold for liability.

Information No matter which legal standard is operational, the consensus among national medical and ethical organizations is that following information should be provided to meet the *spirit* of the informed consent doctrine:

- The patient's diagnosis, if known;
- The nature, purpose, risks and benefits of a proposed treatment or procedure;
- The nature, purpose, risks and benefits of alternative treatments or procedures;
- The risks and benefits of not receiving or undergoing a treatment or procedure.

Emergency Exception to Informed Consent—physicians may proceed with treatment in emergency situations when all of the following criteria are met:

- Life threatening emergency and time is of the essence.
- Patient is not decisional and no legal surrogate decision maker is available.
- Reasonable person would consent to the emergency treatment.

Therapeutic Privilege A long-standing legal principle is that physicians may withhold information if they believe the information would harm the patient. The use of this privilege should be restricted to rare instances when there is good evidence that providing information will upset a patient so he/she “could not rationally engage in a conversation about therapeutic options and consequences” (Meisel 1996). Physicians should not use the privilege out of concern that with information, the patient will refuse a recommended treatment, nor out of fear of provoking normal emotional reactions to bad news.

Summary The purpose of the informed consent doctrine is to promote autonomy of the individual in medical decision making (Meisel 1996). However, the informed consent process is often viewed by physicians as being counter to an equally desirable social goal – a physician's responsibility for a patient's well-being and promotion of health. The point of balance between these two social goals is frequently misunderstood, and will be discussed in the next *Fast Fact*.

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FAST FACTS AND CONCEPTS #165
INFORMED CONSENT IN PALLIATIVE CARE – PART II

David E Weissman MD and Arthur Derse MD, JD

Background In *Fast Fact* #164, the legal basis for the informed consent process was reviewed; this *Fast Fact* discusses common myths about informed consent that arise in palliative care. Readers wishing more information should read the excellent review by Meisel and Kuczewski.

Myths:

1. **Use of Signed Consent Forms—Myth:** *Federal or state laws require written informed consent (patient signature) for invasive procedures.* **FALSE:** The use of signed consent forms are used per local hospital or institutional or accrediting organization policies. They are generally not mandated by law or federal/state regulation. **Note:** state law may mandate written consent for certain tests or high risk treatment (e.g. HIV, genetic testing, or electroconvulsive therapy) and federal law may require written consent in some circumstances (e.g. transfers from emergency departments). Signed consent forms may not shield the physician from claims of negligence due to failure to provide informed consent if the physician did not fulfill the informed consent process (see *Fast Fact* #164).
2. **Emergency Transport to a Medical Facility—Myth:** *No informed consent is necessary for patients admitted to a hospital in transfer from a nursing home, or for patients transported to the hospital following a 911 call.* **FALSE:** There is no “implied consent” just because 911 or a transport ambulance was called; such patients require the same level of informed consent discussions for medical care decisions as any other patient, unless the medical situation satisfies the criteria for the emergency exception (see *Fast Fact* #164).
3. **Low Risk Treatments—Myth:** *No informed consent is necessary when starting “low risk” life sustaining treatments such as IV antibiotics, intravenous hydration, feeding-tube placement, or blood products.* **FALSE:** All these treatments represent interventions with risks and alternatives. An informed consent discussion is especially necessary in seriously ill or dying patients where the option of no intervention is a reasonable choice; *the failure to discuss not using life sustaining intervention represents a failure to provide full informed consent.* Also, patients should be informed that if a life sustaining treatment becomes too burdensome (a risk of any treatment), the patient may withdraw his or her consent and the treatment will be withdrawn.
4. **Present options but not a recommendation—Myth:** *Informed consent means that patients should choose among medical option without physicians introducing their bias toward one specific option.* **FALSE:** The physician’s obligation is to present medical information accurately to the patient or to the individual responsible for the patient’s care and to make recommendations for management in accordance with good medical practice. The physician has an ethical obligation to help the patient make choices from among the therapeutic alternatives.
5. **Documentation—Myth:** *An informed consent discussion needs no special documentation except in cases of invasive procedures.* **FALSE:** Even if not legally required, the content and outcome of an informed consent discussion should always be documented in the medical record and include the elements noted in *Fast Fact* #164 as an indication that the ethical and legal requirements of the process of informed consent have been fulfilled.

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FAST FACTS AND CONCEPTS #178
THE NATIONAL POLST PARADIGM INITIATIVE
Judy Citko JD, Alvin H Moss MD, Margaret Carley RN, JD, and Susan Tolle MD

Background One barrier in the treatment of seriously-ill and dying patients has been the inability to develop a system by which a patient's preferences for life-sustaining treatment are both documented and honored across different care sites. Regional and statewide programs have tackled this problem with variable success. Originally started in Oregon in 1991, the Physician Orders for Life Sustaining Treatment (POLST) Program creates a coordinated system for eliciting, documenting, and communicating the life-sustaining treatment wishes of seriously-ill patients. Programs with the essential core elements of POLST are developing in the majority of states. Although different states may use different names, the program is universally referred to as the POLST Paradigm Program. This *Fast Fact* will review key elements of the POLST Paradigm Program.

The Paradigm The POLST Paradigm was developed as a standardized, advance care planning document to be completed by health care professionals, together with a patient or surrogate decision-maker. The POLST form translates the values expressed in an advance directive into immediately active *medical orders* which do not require interpretation or further activation. POLST aims to provide continuity of care for patients according to their preferences across all care settings (e.g. hospitals, hospice, long-term care and home), and is transferred with the patient throughout the health care system. In each region or state, local leaders have presented widespread education to support its application across the spectrum of health care settings.

The Form The form is brightly colored to facilitate identification and is divided into several sections:

- **CPR decision:** Resuscitate or Do Not Resuscitate (DNR).
- **Scope of treatment:** comfort measures vs. limited additional interventions vs. full treatment.
- **Medically administered nutrition:** none vs. defined trial period vs long-term use.
- **Health care professional signature:** in some states or regions, patient/surrogate signature is strongly recommended or required.

How It Works POLST is designed for seriously-ill adults or those who are medically frail. Completion of the form is voluntary. The health care professional turns the patient's values (expressed personally through conversation, and/or an advance directive, or by the patient's legal representative if the patient lacks decision-making capacity) into actionable medical orders. The orders are valid when signed by a physician (or NP/PA depending on state regulations). Many state/regional POLST programs also require the patient's or legal agent's signature to make the form valid. A copy of the POLST form is included in the medical record while the original remains with the patient as they move across care settings.

Effectiveness Data from completed research projects related to POLST are available on the POLST website (www.polst.org). Key findings indicate that patients' values are accurately reflected in the orders, that the orders are followed by first responders, that life-sustaining treatment orders beyond CPR (e.g. artificial nutrition) are useful to guide care consistent with the patient's wishes, and that implementation can evolve to become a standard of care in a community, region, or state.

State/Regional Initiatives Numerous communities and states are developing or have implemented programs similar to Oregon's with the guidance of the National POLST Paradigm Task Force. The names of endorsed programs include: Medical Orders for Life Sustaining Treatment or MOLST (New York); Medical Orders for Scope of Treatment or MOST (North

Carolina); POLST (California, Hawaii, Oregon, Wisconsin, Washington state); and Physician Orders for Scope of Treatment or POST (West Virginia, Tennessee).

Resources The POLST website has sample downloadable forms, educational materials and videos; a map of states and regions using the form, contact information; a description of the core elements of a POLST Paradigm Program; and information on how to build a coalition to start a POLST Paradigm Program available at no cost. There may be a low cost for larger orders to help cover expenses of a state or regional program's coordinating center. The Center for Ethics in Health Care at Oregon Health & Science University coordinates the national initiative.

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FAST FACTS AND CONCEPTS #219
RESPONDING TO REQUESTS FOR NON-DISCLOSURE OF MEDICAL INFORMATION

Elizabeth Chaitin DHCE and Drew A Rosielle MD

Background What do you do when a family member asks you not to tell your patient important medical information such as a diagnosis or prognosis? Requests for non-disclosure can represent a loving family's efforts to protect a patient from emotional harm, an inaccurate assessment by the family about a patient's preferences or emotional resilience, or an accurate reflection of how the patient would prefer to make decisions. This *Fast Fact* will introduce readers to a practical approach to these clinical dilemmas.

The Problem Contemporary medical ethics and professional standards dictate that patients have the right to choose the medical care that best allows them to meet their life goals. To make such choices requires they be fully informed of their condition, prognosis, and reasonable treatment options (see *Fast Facts* #164, 165). One needs to differentiate the right to such information from the duty to hear the information, however. Patients have different preferences for medical decision-making, ranging from individualistic, to paternalistic (doing whatever the physician recommends), to communal (sharing, or deferring, important medical decisions to family members or religious/community leaders). Truly respecting patient autonomy requires clinicians to identify and respect patient wishes to share or defer decision-making, including a patient's preference to not be informed of key medical information.

Prevention Negotiate with the patient *before* the results of testing arrive as to how much information they would like and who they would like to have present for information sharing. *Are you the kind of person who wants to know the results of the test or would you rather I talk to your children?*

Managing Requests for Non-Disclosure (adapted from Hallenbeck and Arnold, 2007):

- *Stay Calm.* These situations can be confusing and emotional for clinicians. The calmer you remain the more information you will gain from the family as to why they do not want their loved one to be informed of the bad news. Demonstrating frustration or implying that the request is inappropriate can break trust and derail your efforts to resolve the situation.
- *Try to understand the family's viewpoint.* They know the patient best and can provide insight into the cause of the request. Politely ask questions to understand the nature of the request. *Can you tell me more about why you feel this way? How does your family typically handle difficult information? How are important decisions made by your family?* Ask about how the patient has responded in the past to bad news and if they have made specific statements to others about what they want to know. Is the family more worried more about *how* the information is given rather than the information itself (e.g. given to the patient when alone, use of 'death' or 'dying,' the disclosure of specific prognostic time-frames)?
- *Clarify what the patient already knows.* Politely ask questions to understand what the family believes the patient already knows. Does the family think the patient already knows or strongly suspects what is going on and would rather not talk further about it, or is the patient completely in the dark? Have other clinicians already told or implied to the patient what is going on? How did the patient respond to that? Is the patient talking with the family about their concerns? A patient's reluctance to talk with family members may represent an attempt to protect them.
- *Respond empathically.* A family's request to not tell their loved ones usually comes from a kind and loving place; they are often frightened for themselves and the patient. Responding empathically (see *Fast Fact* #29) allows them to recognize that you care about them. It may allow them to see your ability to give information to their loved one in a compassionate way.

- *State your views openly, but as your own views.* Disclose any discomfort you have with the family's request; explain your professional obligation to ensure the patient is able to make informed decisions in the manner they prefer. Disclose this specifically in the context of you wanting what is best for the patient, including respecting how she or he would like to hear information.
- *Be willing to brainstorm possible solutions.* Rigidly informing the family that you must tell the patient breaks trust and is inaccurate. There is no 'one-size-fits-all' solution to these scenarios. Often, there are solutions neither of you have thought about that will meet everyone's goals. In other cases, the family may not have thought about the implications of the request (e.g. giving Mom chemotherapy but not telling her she has cancer).
- *Negotiate a solution.* Recommend to the family that you, in their presence, share with the patient a limited amount of information, and then specifically ask the patient if they would like to hear more. Tell the family what you plan on saying, i.e. – *You came to the hospital because you were not eating well and became dehydrated. We have been trying to figure out what is going on. Some people want to know everything about their medical condition, others prefer the doctors talk with family members about what is happening and the best way to help a patient. What would you prefer?* Contract with the family that they, and you, will respect the patient's decision.

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**FAST FACTS AND CONCEPTS #242
ORGAN DONATION AFTER CARDIAC DEATH****Dana Lustbader MD, FCCM, FCCP and Michael J Goldstein MD**

Background Organ donation after cardiac death (DCD) refers to organ donation from a deceased donor who has been declared dead on the basis of cardio-pulmonary criteria (permanent cessation of circulatory and respiratory function) rather than on neurological “brain death” criteria (permanent cessation of brain function – see *Fast Fact #115*). This *Fast Fact* reviews key elements of the DCD process.

Two Types of Organ Donation

1. **Donation after death by neurologic criteria** occurs when a comatose patient meets brain death criteria. After obtaining consent from the family, the donor is brought to the operating room on the ventilator. Organ procurement occurs in the operating room while the patient remains intubated with a beating heart.
2. **Donation after cardiac death** occurs when a decision is made to discontinue mechanical ventilation/other life-sustaining treatments in a comatose or gravely ill patient who is expected to die quickly after cessation of life-support. Depending on hospital policy, the patient may be extubated in the operating room (OR) to minimize the time between death and organ procurement and thereby optimize donor organ viability for transplantation. Most organ procurement organizations (OPO) have guidelines governing the amount of time between extubation and death during which the organs are considered viable for transplantation. This is generally 60 minutes. If the patient survives longer than that, excessive organ ischemia occurs rendering the patient an unsuitable donor. The patient is then returned to the ICU or other appropriate location for end-of-life care.

Selecting Patients for DCD Appropriate patients are generally comatose patients for whom a decision has been made to discontinue life-sustaining treatments with the expectation of imminent death. The decision to discontinue life-sustaining treatments is made prior to any discussions of organ donation. Most institutions have policies and procedures which alert the OPO of potential donors. After discussion with their medical director and recipient transplant centers, the OPO determines donor suitability. Trained professionals – usually OPO representatives – approach the family about organ donation, and consent the family/patient decision makers for organ donation. Potential donors are generally between 0 and 60 years of age. Patients should not meet the criteria for death by neurologic criteria (they are candidates for organ donation via brain death protocols). The OPO staff prognosticate whether the patient is sufficiently likely to die within the 60 minute window after cessation of life-prolonging treatments. This estimate is based on physiologic parameters including spontaneous respiratory rate, negative inspiratory force, age, oxygen saturation, level of hemodynamic instability, and body mass index (BMI).

Procedure

1. Families are counseled about what to expect during the discontinuation of life-sustaining treatments and what to expect as the patient receives comfort care. Hospitals may have policies requiring the patient to have a DNR order while awaiting the DCD procedure; in others the decision to resuscitate a patient or not in order to attempt to maintain the patient as a viable organ donor is a negotiated decision. Families should be prepared for the possibility that the patient may not die quickly after the ventilator is withdrawn and that the patient may become an unsuitable donor. This occurs in about 20-30% of DCD cases nationally. This can cause added emotional trauma to grieving families who may want both a swift and comfortable death for their loved one as well as the opportunity to help others through organ donation. Families should be reassured that the patient will

continue to receive careful symptom management until she or he die no matter how long that takes.

2. In order to prevent conflicts of interest, members of the OPO and organ recovery teams should not be involved in the decision to discontinue life-support, or in directing the medical care of the patient prior to the declaration of death. Because of this, intensivists, palliative care physicians, or other clinicians may be asked to direct the care of the dying donor after extubation.
3. Once consent is obtained from a legal surrogate and appropriate teams are ready, discontinuation of life-sustaining treatments begins. Extubation generally occurs in the operating room but may occur in a nearby ICU or recovery area based upon local hospital practice. Many hospital policies allow family members to be present in the operating room until the patient dies.
4. The patient may be given pre-extubation medications to relieve anticipated distress. These medications, as well as symptom medications given after cessation of life-support, should be given in the exact same way as in non-DCD situations to alleviate signs of pain, labored breathing, and other symptoms (see *Fast Facts* 33-35).
5. The patient is extubated to room air. Other lines and tubes are discontinued as deemed appropriate to maximize patient comfort.
6. All non-comfort medications are discontinued including vasoactive agents.
7. Declaration of death is based on hospital policy. Usually policies require apnea and 2 to 5 minutes of asystole or pulseless electrical activity. The hospital's DCD policy will outline the exact criteria for declaring cardiac death.
8. Following death pronouncement the patient is taken to the OR, or the organ recovery team enters the OR where the patient died and procurement begins. The organ recovery team never encounters the patient's family during the DCD process.
9. If the patient does not die in a reasonable amount of time as determined by the organ procurement organization, the patient is returned to a location in the hospital for ongoing symptomatic treatment until death occurs. Ongoing emotional and bereavement support should occur for family members throughout the process.

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FAST FACTS AND CONCEPTS # 292
DO NOT RESUSCITATE ORDERS IN AN OPERATING ROOM SETTING
David Dugan MD and Jay Riseman, MD, FACS

Background Because of the rapid physiologic changes that may occur inside of an operating room (OR), patients and families may be unaware of the resuscitative efforts and management plans that may happen inside of them. Many health care institutions have practices and policies which automatically suspend do-not-resuscitate (DNR) orders when patients go to the OR. This Fast Fact will review ethical considerations and positions of major medical organizations regarding such policies and DNR orders in the OR in general.

Policies The Association of Perioperative Registered Nurses (1), the American College of Surgeons (ACS) (2), and the American Society of Anesthesiology (ASA) (3) all have position statements on the status of DNR orders in ORs. There is firm agreement among them that health care institutions should promote opportunities for a careful, informed discussion about potential resuscitative measures between the patient (or surrogate), surgical, and anesthesia teams, before a planned procedure in order that a treatment approach best matches the patient's goals of care and medical situation. There also is agreement that policies which automatically suspend DNR orders in the OR are inappropriate if the policy does not mandate an informed consent discussion with the patient/surrogate, or factor in the risk/benefit profile of the intervention.

Causes and Outcomes of Cardiac Arrest in the OR National in-hospital resuscitation registry data suggests that survival from CPR is higher in the perioperative setting versus other in-hospital settings: asystole 30.5% vs. 10%; pulseless electrical activity 26.4% vs 10%; pulseless VT/VF 41.9% vs approximately 34% (4,5). The overall frequency of major perioperative cardiac events in patients undergoing non-cardiac surgery is likely between 2-6% depending on the study (6). Cardiac arrest rates attributable to anesthesia is likely much lower -- approximately 0.5 per 10,000 (7). In a single center study, 35% of cardiac arrests in the OR were due to bleeding, 43.9% were related to cardiac causes, and 21.1% were attributable to other causes, with hemorrhage having the poorest outcome (7).

Balancing Ethical Precepts Patient autonomy is paramount to ethical decision-making. Indeed, concerns about differential treatment once a DNR order is in place may make a patient hesitant to pursue such a directive (8). Still, there are considerations that may lead surgical teams and anesthesiologists to hesitate when adopting "no resuscitation efforts" especially for risky surgeries. Anesthesiologists are often resuscitating patients in an ongoing fashion via titration of vasopressors and other life sustaining therapies; hence there may not be a clear line between normal anesthesia management and intra-operative resuscitation. Surgical teams may view their primary objective in the OR as to provide care that sustains survival during the procedure. Thus, intra-operative deaths in the setting of a DNR order may not only contribute to feelings of guilt, but may also lead to quality reviews and a negative impact on quality metrics such as 30 day mortality rates. Regardless, most important to achieving balance among these concerns is an open discussion among relevant parties that allows patients to negotiate their treatment preferences whilst attaining the input of the anesthesia and surgical teams with regards to how specific treatment preferences may affect their care during the proposed procedure.

Required Reconsideration of DNR Orders Instead of a policy that leads either to the automatic enforcement or cancellation of a DNR order in the OR, the American College of Surgeons (ACS) recommends that a "required reconsideration of DNR orders" discussion be incorporated systematically prior to a proposed procedure (2). During such a discussion, the surgical/anesthesia team should clearly delineate to the patient or surrogate which resuscitative efforts are felt to be essential to the success of the proposed procedure and which are not. They should also describe the challenges in discerning routine anesthesia management in the OR from resuscitative efforts as well as the more favorable outcomes of cardiac arrests in the OR. Based upon the patient/surrogate's goals of treatment and the nature of the surgical procedure, the

intent of such a discussion is to achieve a mutually agreeable operative and peri-operative management approach. Potential outcomes could include (3):

- a. The DNR order is rescinded during surgery and the perioperative period and the patient consents to the use of any resuscitation procedure needed to treat the clinical events that occur.
- b. The original DNR order is maintained and prior treatment limitations are upheld.
- c. The DNR order is modified such that limited attempts at resuscitation are clearly defined with regards to specific procedures.
- d. The patient and surrogate allow the anesthesiologist and surgical team to use clinical judgment in determining which resuscitation procedures are appropriate in the context of the situation and the patient's stated goals of care.

Changes or clarifications should be documented in the medical records and discussed with the members of the operating room staff.

Ethical or Professional Conflict When any member of the team disagrees with the management approach established, he or she may withdraw from the patient's care in a nonjudgmental fashion. If agreement on a surgical care strategy cannot be achieved, the surgeon should consider a referral to another surgeon or institution, and/or provide an alternative for care. In such scenarios, assistance from palliative care and/or bioethics consult teams may be of assistance to patients and clinicians.

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