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He's 15, Needs This Operation and He's DNR!

David G. Mann, M.D.
Texas Children's Hospital, Houston, TX

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Stem Case and Key Questions Content

Meeting the patient:

Billy Bob, a 15 year old male with terminal lymphoma, is scheduled semi-emergently for the surgical creation of a pericardial window to relieve increasing tamponade physiology. In the pre-op holding area, you find him sitting upright in bed looking uncomfortable; and, you note that his SpO_2 is 95% on 10L non-rebreathing face mask and that his breathing is labored. You introduce yourself to Billy Bob and the 2 men with him in the room as the anesthesiologist who will be caring for Billy Bob in the operating room. While Billy Bob shakes your hand and smiles weakly, one of the men tearfully states, "Before we start I need to tell you, that as his fathers, we have signed the form designating Billy Bob as DNR. He's been through so much and we don't want him to suffer any more; so, we don't want him to be intubated or resuscitated." You think Billy Bob looks sad as he shrugs his shoulders and nods his head tiredly. You shake the hand of the man who spoke, telling him that you'll talk extensively about the DNR in just a moment. He appears to relax and tells you that he's Billy Bob's dad, Cristião. He introduces the other man to you as his husband, Tomas, Billy Bob's biological father.

Advanced Directives-

Consider the various types of Advanced Directives (AD) and under what conditions each would apply. What are the legal and/or ethical implications of an AD and are these implications binding?

Informed Consent-

What constitutes "informed consent" and who can provide it? Consider the difference between "consent" and "assent". What are the ethical implications of discord between them?

Pre-operative Assessment and Plan:

During the focused pre-operative assessment, you encourage Billy Bob and his dads to talk about why they've elected the DNR designation. Cristião is adamant "that Billy Bob doesn't want to suffer any more". In fact, he admits, Billy Bob hadn't wanted the last bout of chemotherapy; however, the cancer doctors offered a new and promising drug that was only available under their research protocol. This prompted his fathers to essentially force Billy Bob to accept the new drug. After starting the treatment, Billy Bob developed SVT and was "shocked" out of it. Later, as a small fluid collection around his heart continued to grow, he became ineligible to continue treatment under the study protocol. After that whole experience, the fathers feel tremendous guilt that he needs a surgically placed drain to remove the fluid from around his heart in order to breathe better during his final days. All of them accept that the end is near.

The circulating nurse enters the room and introduces herself as you review the DNR. You note that “no resuscitative drugs may be administered, and aggressive interventions or therapies, including intubation, mechanical ventilation, and CPR are not to be performed”.

Advanced Directives-
What options exist for providing anesthesia care to patients with DNR orders or other directives that limit treatment?
You explain that during the normal course of anesthesia, “resuscitative” drugs are routinely administered to manipulate a patient’s heart rate and blood pressure. In essence, it’s difficult to safely administer anesthesia without using these drugs when necessary. Cristião asks Billy Bob if it would be ok for you to treat him with these drugs, just like any other patient under anesthesia. Billy Bob nods in agreement. Tomas interjects, “The drugs are ok, but no CPR. That’s more aggressive than we want to be.” Acknowledging his concern, you explain that a drug administered through the IV in Billy Bob’s wrist can’t work unless it gets to his heart, which requires blood circulation, and sometimes the only way to circulate the blood is to perform chest compressions. Tomas looks surprised and says that “nobody’s ever explained it like that before”. Looking at Billy Bob, Tomas asks if CPR for this purpose would be ok with him. Billy Bob again nods his assent, then adamantly states, “But, no shocks”. Responding to your look of surprise, Tomas shares with you that “it was a nightmare - Billy Bob vividly remembers being shocked out of SVT a few weeks ago”. After that, he told his dad’s, “I’d rather die than go through that again.” and he insisted that both his dad’s promise “to never let anyone do that to him again”.
You explain that with a history of SVT, there is a higher likelihood that Billy Bob will experience SVT again, especially with the change in the geometry of his heart caused by the fluid collection surrounding it. You further explain that there are some maneuvers and medicines that may treat the SVT; however, an electrical cardioversion, or “shock” as they call it, may be (with no guarantee) the only way to stop the SVT. Billy Bob adamantly repeats, “No shock”. You reiterate to all of them that, if the other treatments don’t work, he may die from an unstable SVT. Then you look each of them in the eye and say, “Just to be clear, each one of you is telling me not to “shock” Billy Bob, even if it means that he’ll die from an unstable arrhythmia, like SVT.” Each one returns your stare and says “No shock, even if it means that he’ll die.” In accordance with their wishes, you agree not to “shock” Billy Bob under any circumstance, even if not doing so means allowing him to die.

Advanced Directives-
What are the attending anesthesiologist’s ethical obligations when temporarily altering an AD? Who “needs to know” about the alteration(s)? When and how should these providers be informed?

Professionalism-
What happens if your personal belief(s) preclude you from agreeing to allow patients to die, in accordance with their AD, instead of treating them?
Noting the “no intubation or mechanical ventilation” provision of the DNR, you tell Billy Bob and his dads that for this procedure you do not plan to place a breathing tube; however, if the drug that he needs is oxygen, an efficient way to deliver it is through a breathing tube. Cristião replies that they don’t want Billy Bob to spend his final days on a breathing machine. You point out that placing a breathing tube does not have to be permanent. If treatment with the breathing tube is not achieving the therapeutic goal, it can be removed. Tomas says that a nurse told them “it’s

better not to start a treatment because once it's started, it can't be stopped." Based on this information, they don't want to put him on a breathing machine because she told them that "he'd never get off it". You agree that there is a lot of "folklore" about how it's illegal or unethical to stop a treatment once it's been started; however, the "folklore" is just that, "folklore", and explain that it's neither illegal nor unethical to stop a treatment that is inconsistent with the therapeutic goal. You suggest an alternative to them. If intubating Billy Bob is appropriate, they could agree to permit it for a pre-determined "trial period", perhaps 24 hours. In other words, the breathing tube would be removed after 24 hours because it's "no longer an appropriate therapy", or it's a "futile" therapy, or it is "inconsistent with the therapeutic goals" for Billy Bob.
Appearing to trust you, they agree to allow Billy Bob to be intubated in the OR; however, they don't ever want him to return to the ICU. You explain that this would require you to remove the breathing tube before leaving the OR/PACU, which again may result in his death. They recognize this and maintain that he can only be intubated, if necessary, while he's in the OR. You agree that if it becomes necessary to intubate him, you will extubate him prior to leaving the OR, even if this results in his death.

Advanced Directives-
Would you agree to extubate prior to leaving the OR; why or why not? What constitutes "medical futility"?
Intraoperative Course:
In the OR, Billy Bob receives a ketamine TIVA, spontaneously breathing with a natural airway, while Dr. Kitty creates a pericardial window. As the dressing is being placed, Billy Bob's heart rate acutely increases from 88bpm to 190bpm, and you note a narrow-complex QRS on the ECG monitor. You check a NIBP which is 118/58; it had previously been stable at 145/90. You direct the anesthesia fellow to perform carotid massage while you reach for adenosine. Following the carotid massage maneuver, the NIBP is 78/42. As you administer the adenosine, you state aloud that the patient is in SVT. Dr. Kitty looks up and yells "ya gotta shock him". You remind him that Billy Bob has refused "shock" as a treatment for any arrhythmia. Dr. Kitty yells "I'm captain of this ship and I demand that you shock him. He's gonna die if you don't."

Professionalism-
Is there a "captain-of-the-ship" in an OR; if yes, who is it? Are there patient safety concerns for adhering to the "captain-of-the-ship" doctrine; what are they?

Advanced Directives-
Is there an ethical justification for "shocking" Billy Bob again his expressed wish? What if Dr. Kitty is devoutly religious, believing that everything that can be done to preserve a life must be done - would this make "shocking" Billy Bob against his expressed wish more or less ethically justifiable?
Following the adenosine, a sinus rhythm is re-established at a rate of 79bpm and the NIBP reads 128/68. However, almost immediately the heart rate returns to the 190's, again with a narrow-complex QRS, and the next NIBP is not measurable. Despite your best resuscitative efforts (without administering electrical cardioversion), a perfusing rhythm is never re-established and Billy Bob dies.
Post-operative Course:
After informing Billy Bob's fathers of his death, and the events leading up to it, you sit quietly with them as they cry. A few minutes later, both men shake your hand and thank you, for respecting Billy Bob's humanity and acting according to his wishes.

Model Discussion Content

The provision of anesthesia to a patient with a DNR order undergoing an emergent palliative surgical procedure requires excellent communication, unambiguous agreement, and definite time-lines for the perioperative care. The agreement regarding such care must be communicated to all of the patient's providers.

Starting the conversation with the patient, a surrogate, or both, requires an open, accepting, and nonjudgmental attitude from the anesthesiologist. This is necessary in order to establish an open forum for the exchange of information. The patients, or surrogates, must know that their feelings, ideas, and desires will not be subordinate to a medical machine. It is not necessary for anesthesiologists to agree with the patient's moral/ethical views, but they must be able to openly receive this information. In addition, the anesthesiologist must educate the patient on the unique issues surrounding the delivery of an anesthetic in the setting of a DNR. Providing the highest quality patient care requires that the patient and the physician educate each other.

Meeting the Patient:

Advanced Directives-

Consider the various types of Advanced Directives (AD) and under what conditions each would apply. What are the legal and/or ethical implications of an AD and are these implications binding?

Informed Consent-

What constitutes "informed consent" and who can provide it? Consider the difference between "consent" and "assent". What are the ethical implications of discord between them?

The patient's wishes are the "gold standard" for medical decision making. This stems from the principle of autonomy and is legally recognized as both a common-law and constitutional right. As such, every patient must provide informed consent prior to undergoing any medical intervention. The ability to provide "informed consent" requires a number of conditions; namely, the patient must (1) be an adult, i.e. attained the legal age of majority, (2) be determined to be competent or have the capacity to make each decision, and (3) be provided the information (benefits, risks, and alternatives) needed to make the decision. Lack of any one of these conditions would preclude an informed consent.

A patient who is legally of the age of minority (adolescent, pediatric, or neonatal) still has autonomy; however, it is exercised by a surrogate decision maker (the legal guardian or parent). Patients determined to lack the capacity (to be incompetent) to make medical decisions also have autonomy, again exercised by a surrogate. Two issues arise with surrogate decision makers, namely (1) who is the appropriate surrogate, and (2) what standard should the surrogate use when making decisions on behalf of the patient. In the case of legal minority, the recognized surrogate is the legal guardian, e.g., the parents. It is assumed ethically and legally that the parents will always act in the best interest of their child; as such, a "best interest" standard is used by the surrogates for making medical decisions. This remains true for neonates and children; however, at some point during adolescence, patients attain the

intellectual, emotional, psychological maturity necessary to have and state desires/wishes related to their own care. A transition is occurring. Pre-transition, neonates or children do not have the maturity or experience necessary to make decisions regarding their own care, so the surrogate makes decisions in their best interest. During the transition period, an "informed assent" is obtained. The adolescent assents to undergo, or participate in, the medical intervention, although legally the surrogate must still "consent" to it. Post-transition, the surrogate acts on the patient's stated wishes, known as the "substituted judgment" standard. This standard answers the question, "If the patient could (legally) state what she would want, what would she say?" The substituted judgment standard is also used for patients who no longer have the capacity to make decisions or declare their wishes.

When the patient lacks decisional capacity, the legal surrogate must be identified. In pediatrics, the patient never had decisional capacity and the surrogate is the parent or legal guardian. However, when a competent adult is no longer capable of making decisions or stating her wishes, a hierarchy can be followed to determine the appropriate surrogate. This may vary by state, but typically the legal spouse is recognized first, followed by the patient's adult children, parents, closest living relative, someone invested in the patient's care (clergy, friends), and finally, the patient's physician. Based on their relationship with the patient, each of these surrogates should apply a substituted judgment standard, using a best interest standard only when the patient's wishes truly are not known.

Recognition that the legal "gold standard" is having the patient making decisions for him/herself leads to the Advanced Directive (AD). Using an AD allows competent adult patients to make and declare in advance their wishes regarding what medical interventions they would or would not want. In essence, patients use an AD to provide their own substituted judgment decisions. Various AD types exist, such as a "living will", a "Durable Power of Attorney for Health Care (DPAHC)" or "Health Care Proxy", and a mix of these two; each is applied under a different set of conditions.

A "living will" is an instructional directive, where the patient declares in advance, "do this, don't do that". The "durable power of attorney for health care (DPAHC)" is a proxy directive, where patients identify the individual(s) they have chosen to make health-care decisions for them in the event that they lack the capacity to do so. Unfortunately, there is no uniform definition of what is meant by the term "do-not-resuscitate (DNR)" beyond not performing CPR. Further, a DNR order is not an advance directive; it's a physician order. The patient provides informed consent to withhold resuscitative interventions (or informed refusal to receive them); and, a physician enters an order into the patient medical record indicating which resuscitative interventions are not to be administered, in accordance with the patient's wishes. The challenge is determining exactly which resuscitative interventions the patient is refusing under a DNR. A list of possibilities can logically be separated into resuscitative interventions intended to support organ perfusion, oxygenation, and ventilation. This may include external cardiac massage (chest compressions), electrical cardioversion or electrical defibrillation or both, pharmacological interventions to manipulate heart rate and/or blood pressure, and crystalloid/colloid transfusions.

In addition, it may include endotracheal intubation or any/all airway manipulation for oxygenation, and mechanical or any positive pressure means of ventilation.
It is important to note that an advance directive is not a contract. Unlike a contract, it is only binding as long as the patient wishes it to be binding. Stated differently, the patient always has the right to revoke an advance directive and some states require that even an incompetent patient's request to revoke an advance directive be honored.

Pre-operative Assessment and Plan:
Advanced Directives-
What options exist for providing anesthesia care to patients with DNR orders or other directives that limit treatment?
The third condition of informed consent involves providing information (benefits, risks, and alternatives) regarding a proposed intervention to the patient. In order to provide the appropriate amount of information for the patient to make an "informed consent (or refusal)", the anesthesiologist must understand the patient's goals or intentions under the DNR. These can be separated into global or overriding goals, and specific or therapeutically directed goals. A global patient goal may be the desire for a quick, dignified death, rather than a slow, undignified (but technologically impressive) decline that ultimately results in death. The specific or therapeutic goals are more elemental, such as no endotracheal intubation, no chest compressions, etc. This distinction is important when discussing the specific elements of "resuscitation" under anesthesia and educating the patient on the unique anesthetic implications of each element. However, the patient's global goals are also important. An itemized list of resuscitative elements may be inadequate for an unanticipated or circumstantial variation that was not specifically discussed. For example, the patient does not want an endotracheal intubation under circumstance X, but what about circumstance Y? A sense of the patient's global goals would help the anesthesiologist decide using a "substituted judgment", instead of a "best interest" standard in this scenario.

The ASA has published "Ethical Guidelines for the Anesthesia Care of Patients with Do-Not-Resuscitate Orders and Other Directives that Limit Treatment" (last amended October 16, 2013)[1]. The guidelines delineate three options, namely (1) a full attempt at resuscitation, (2) a limited attempt at resuscitation defined with regard to specific procedures, or (3) a limited attempt at resuscitation defined with regard to the patient's goals and values. In essence, a temporary alteration to the DNR or AD is agreed upon between the anesthesiologist and the patient. Under a full attempt at resuscitation alteration, the patient's DNR or AD is suspended entirely so that resuscitative procedures appropriate for the clinical scenario may be used during the perioperative period. Under a limited attempt at resuscitation alteration, the anesthesiologist and patient must agree on the definition of "limited". Limited can be defined by specific procedures, such as no endotracheal intubation or intraoperative endotracheal intubation only, etc. Limited can also be defined as allowing the anesthesiologist to make a clinical judgment, in accordance with his understanding of the patient's goals and value set, appropriate for the clinical scenario. As the alteration is temporary, to address specific and unique anesthetic issues, the time line for resumption of the original DNR must be agreed upon in advance. Will

the patient accept these interventions during the intraoperative period, or perioperative period, or for some number of hours/days postoperatively under a "therapeutic trial" basis?

Advanced Directives-
What are the attending anesthesiologist's ethical obligations when temporarily altering an AD? Who "needs to know" about the alteration(s)? When and how should these providers be informed?
Given the magnitude of the consequences when altering a patient's DNR, it would be ethically difficult to justify delegating this discussion to an ancillary anesthesia provider; it is the responsibility of the attending anesthesiologist. An attending anesthesiologist responsible for the medical training of future anesthesiologists and/or physicians should include the trainees in the discussion. This situation presents an unparalleled opportunity to model professionalism (what it means to be a physician) to the trainees. However, caution is advised so that the quality of the patient's care is in no way diminished by the educational process.
The anesthesiologist must document in the patient's medical record the agreed upon alterations to the DNR, including the time period for which the alterations will remain in effect. If the patient elects a limited resuscitation alteration based on the anesthesiologist's clinical judgment, some discourse on the anesthesiologist's understanding of the patient's goals and values would be appropriate.

Ideally, all of the perioperative providers would be involved in the discussion. Minimally, the surgeon and the patient's primary physician must be informed; ideally, they would be present and involved in any discussion with the patient for any agreed upon alteration to the DNR. Beyond the physicians, all of the intraoperative team members should be informed of the discussion and the agreed upon alterations to the DNR. This is necessary because any of the team members may have a moral, ethical, or religious objection to any or all of the alterations, and these objections should be identified and addressed prior to entering the operating theater. All of this should occur prior to entering the OR, and reiterated during the "time-out", prior to the induction of anesthesia.

Professionalism-
What happens if your personal belief(s) preclude you from agreeing to allow patients to die, in accordance with their AD, instead of treating them?
Physicians are not obligated to provide treatments that are contrary to their moral values or religious beliefs. They are only obliged to assure that the patient is medically stable and safe prior to relinquishing patient care responsibilities to another physician who can provide the treatment(s) in question. Ethically, no providers are required to participate in a patient treatment contrary to their personal values/beliefs.

Advanced Directives-
Would you agree to extubate prior to leaving the OR; why or why not? What constitutes "medical futility"?
Legally, extubating the patient is consistent with his (via the surrogates) informed refusal of this

medical intervention outside of the OR, and refusing to extubate him could potentially be considered battery. Ethically, a continued intubation outside the OR would be a medical intervention that is no longer consistent with, or capable of achieving the patient's therapeutic goals. Another term to describe this would be "futile". Futility can be characterized physiologically or psychologically. A medical intervention that is physiologically futile is one that will not achieve the intended physiologic goal. For example, CPR is instituted as a bridge to reestablishing hemodynamic homeostasis; however, performing CPR after recognizing that hemodynamic homeostasis will never be reestablished makes continuing CPR futile. A medical intervention that may achieve a physiologic goal, but is inconsistent with the patient wishes, can also be futile. This is true when patients do not recognize the intervention as beneficial to them; it is inconsistent with their moral value set. It is consistent with maintaining the integrity of the medical profession for physicians to decline to inflict pain and suffering on a patient against their expressed wishes.

Intraoperative Course:

Professionalism-

Is there a "captain-of-the-ship" in an OR; if yes, who is it? Are there patient safety concerns for adhering to the "captain-of-the-ship" doctrine; what are they?

Historically, hospitals were considered to be immune from liability under a "charitable immunity" legal doctrine. At that time, it was accepted that hospitals were providing a space and ancillary staff to doctors for the care of their patients, instead of providing care to patients since the doctors were not hospital employees. Under this arrangement, hospitals were not financially liable for an undesirable patient outcome; however, the non-hospital employed doctor was very liable. Therefore, the surgeon became the "captain of this ship" in the OR. Surgeons legitimately wanted to direct, command, or order every action that was undertaken inside the OR because they were held legally responsible for every action. This legal paradigm persisted until the 1962 Illinois Supreme Court ruling in the case of Darling v. Charleston Community Memorial Hospital[2]. In that case, the court ruled that the hospital was accountable, and liable, for the care provided to patients within their facility and by their employees. As of 2007, this ruling has been cited in a least 344 cases, and is credited with sinking the "captain of the ship" doctrine. By creating fertile opportunities for malpractice suits against deeper-pocketed institutions, *Darling* initiated the era of increased liability for health care providers, and increased institutional interest in quality improvement. This has translated into physicians being appointed to the hospital staff, receiving "privileges" to provide specific medical services within the hospital facility, and the modern day hospital quality assurance/control programs for procedures and equipment, as well as maintaining a minimum qualification level and on-going specialty training for the staff.

The overriding patient safety concern under the "captain of the ship" doctrine arises from establishing a "power" hierarchy. An OR hierarchy where the surgeons are "captain of the ship" or at the power pinnacle, with all other care providers or team members subordinate to them, increases the risk to the patient because none of the other team members is empowered to prevent an error from occurring. A surgeon, as a fallible human being, may mistakenly believe

that the right leg is to be amputated. Even when they recognize that an error is about to occur, the subordinates within the hierarchy are disempowered to speak-up and to prevent it.

Advanced Directives-

Is there an ethical justification for "shocking" Billy Bob again his expressed wish? What if Dr. Kitty is devoutly religious, believing that everything that can be done to preserve a life must be done - would this make "shocking" Billy Bob against his expressed wish more or less ethically justifiable?

The patient's expressed wish not to be "shocked" is ethically valid under the principle of autonomy; however, some physicians may feel the combined principles of beneficence, non-maleficence, and professional integrity would have greater moral weight. The interpretation of these principles by the physician is in stark contrast to the patient's interpretation of the same principles. Beneficence, according to the physician, is achieved given the possibility of converting a non-life sustaining rhythm to a life-sustaining one. However, according to the patient, non-maleficence is not achieved because he holds that the electrical cardioversion is directly harmful to him. Professional integrity is again in opposition. Physicians fulfill their duty to "heal" or save lives; however, patients holds that physicians failed to "first, do no harm". Ethically, both interpretations are potentially valid; however, legally the patient has provided an informed refusal of this specific intervention. This introduces the legal question of battery committed by the physician against the patient.

Believing that everything that can be done to preserve life must be done is referred to as "vitalism". A physician who holds a vitalistic moral value set has no obligation to participate in the care of patients with directives limiting their care. This would provide great ethical justification for a "vitalist" physician's recusal from participating in the care of a DNR patient. It does not however change the ethical justification for acting against the patient's expressed wishes, even though a vitalist physician would likely attribute even greater moral weight to the combined principles listed above.

References

1. **Ethical Guidelines for the Anesthesia Care of Patients with Do-Not-Resuscitate Orders and Other Directives that Limit Treatment** (last amended October 16, 2013), found at http://www.asahq.org/For-Healthcare-Professionals/Standards-Guidelines-and-Statements.aspx
2. Saver RS (2009). **Darling v. Charleston Community Memorial Hospital** in S.H. Johnson, J.H. Krause, R.S. Saver, & R.F. Wilson, Health Law & Bioethics (1st ed., pp. 27-50), New York, NY: Aspen Publishers.
3. Johnson SH, Krause JH, Saver RS, and Wilson RF (Eds.), **Health Law & Bioethics** (1st Ed., 2009) New York, NY: Aspen Publishers.