

# Ethics of Codes and Codes of Ethics

## *When Is It Ethical to Provide Cardiopulmonary Resuscitation During the COVID-19 Pandemic?*

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**Objective:** Our study aims to provide a paradigm when it is ethical to perform cardiopulmonary resuscitation (CPR) on patients during the COVID-19 pandemic.

**Summary Background Data:** Hospitals around the nation are enacting systems to limit CPR in caring for COVID+ patients for a variety of legitimate reasons and based on concepts of medical futility and allocation of scarce resources. No ethical framework, however, has been proposed as a standard to guide care in this crucial matter.

**Methods:** Our analysis begins with definitions of ethically relevant terms. We then cycle an illustrative clinical vignette through the mathematically permissible possibilities to account for all conceivable scenarios. Scenarios with ethical tension are examined.

**Results:** Patients have the negative right to refuse care including CPR, but they do not have the positive right to demand it. Our detailed ethical analysis and recommendations support CPR if and only if 1) CPR is judged medically beneficial, and in line with the patient's and values and goals, 2) allocations or scarce resources follow a just and transparent triage system, and 3) providers are protected from contracting the disease.

**Conclusions:** CPR is an intervention like any other, with attendant risks and benefits and with responsibility for the utilization of limited resources. Our ethical analysis advocates for a systematic approach to codes that respects the important ethical considerations in caring for the critically ill and facilitates patient-centered, evidence-based, and fair treatment to all.

**Keywords:** cardiopulmonary resuscitation, end-of-life care, medical ethics

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**A** 62-year-old male with a history of chronic obstructive pulmonary disease and Grade I diastolic dysfunction presents to the emergency room with new fever, shortness of breath, and myalgias. He is tested for COVID-19 and is found positive for the disease. He is admitted to the hospital's intensive care unit and over the next 2 days develops hypoxic respiratory failure requiring intubation and mechanical ventilation support. Several days later, his oxygenation remains poor and imaging of his chest shows enlarging pulmonary infiltrates bilaterally. His code status in the electronic medical record is listed as "Full Code" and is confirmed via telephone by the patient's wife. Several COVID+ patients are expected to be transferred to your hospital and you realize that ventilators are a scarce resource. The overnight team would like to know what to do if the patient sustains circulatory arrest during the night.

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The COVID-19 pandemic has forced to the forefront an urgent need for guidance as to when it is (not) ethically appropriate to provide cardiopulmonary resuscitation (CPR) to patients. Hospitals around the nation are enacting systems to limit CPR in caring for COVID+ patients for a variety of legitimate reasons and based on concepts of medical futility, allocation of scarce resources, and concern that those providing CPR may become infected as well.<sup>1,2</sup>

Prior to the COVID-19 pandemic, an estimated 5.7 million patients were admitted to intensive care units annually in the United States with an attendant mortality of about 1 million deaths.<sup>3</sup> Clinicians and their patients—those who recovered as well as those who succumbed to their illness—were likely to face numerous healthcare decisions during their hospitalizations, with the patient's code status addressed during these discussions. Never before the current pandemic, however, have we seen such a strong movement toward shifting the decision making with regards to patients' code status away from the patient and toward either the care team or the hospital triage system.<sup>2,4</sup>

The rapid evolution in provider attitudes and hospital practice with regards to the changes in patients' code status is ethically alarming, especially if these changes are made by bedside rationing instead of a systematic and transparent approach or if they lead to discrimination in care. While managing scarce resources is at the moment the sobering reality of many US hospitals, an ethically sound approach to patients' code status must rely on ethically considered, fair, and transparent measures.<sup>4–6</sup> Given the immensely consequential nature of one's code status, it is imperative that any alteration to our practice is firmly grounded in accepted tenets of medical ethics. In response to the shifting reality of our many institutions' approach to patients' code status, we have outlined a systematic and ethically sound approach to addressing code status for critically ill patients. Our analysis addresses practice differences during normal times and during a pandemic.

### METHODS

Our analysis begins with definitions of ethically relevant terms. We then cycle our clinical vignette through the mathematically permissible possibilities to account for all conceivable scenarios. Scenarios with ethical tension are then examined, including recommendations derived from our ethically considered arguments.

### Definitions

#### Autonomy

Literally, "self-rule" or "self-determination": Autonomous actions are independent from the will of others. To be autonomous is to be free to reach one's own conclusions about what ought to be done. An autonomous person is free from controlling interferences and from personal limitations (eg, access to information) that prevent responsible decision-making.<sup>7,8</sup>

### Decisional Capacity

A patient's ability 1) to receive information regarding the risks, benefits, and alternatives of a specific treatment; 2) to understand and process this information; 3) to deliberate; and 4) to make, communicate, and explain choices. Decisional capacity is determined by a physician, whereas competency is a legal determination rendered by a judge. An individual's decisional capacity can fluctuate and can depend on the complexity of the decision being made.<sup>7</sup>

### Beneficence

Performing acts that (are intended to) bring about good/valued effects for the recipients of the acts: Physicians should only offer choices to patients that, in their professional judgment, will further the patient's values and goals.<sup>7</sup>

### Nonmaleficence

Refraining from performing acts that bring about harmful effects for the recipients of the acts: Physicians are obligated to avoid causing harm or suffering to their patients. This obligation is often paraphrased as "first, do no harm."<sup>7,8</sup>

### Justice

Consideration of the interests of everyone with a stake in the outcome of an action: This obligation—which ensures fair access to and utilization of healthcare resources—means that physicians should promote systematic solutions to address inequalities in healthcare. One understanding of justice widely referenced in medical ethics discussions proposes that all social values are to be distributed equally unless an unequal distribution of any or all of these values is to the advantage of everyone with a stake in the outcome of an action.<sup>7,9</sup>

### Patient Rights

Patients with decisional capacity have the right to participate in decisions about the life-sustaining medical treatments they receive, especially by clearly conveying to the medical team their goals of care and their values.<sup>10,11</sup> They have the right to be informed of their diagnosis and their prognosis, to be involved in their care planning and treatment, and to request or refuse treatment. They have the absolute right to refuse or discontinue any medical treatment even if doing so will hasten their death. However, as per CMS Standard 482.13(b)(2), pp. 66–67, "this right must not be construed as a mechanism to demand the provision of treatment or services deemed medically unnecessary or inappropriate." Thus, patients do not have the absolute right to expect or demand any treatment that is not clinically indicated.<sup>7,12–14</sup>

### Futility

Treatment that the treating physician concludes does not have a reasonable chance of improving the patient's condition or that the patient (or surrogate) concludes is not consistent with his or her goals and values. Physiologic futility is the utter impossibility that the patient's condition can be restored by an intervention such as CPR (ie, "only prolonging the dying process"). The intervention in question will not under any circumstances prolong the patient's life. Value-based futility (or quality-of-life futility) is the recognition that a restorative intervention such as CPR conflicts with the patient's values and goals of care or—if the patient's values and goals of care are not known—the values and goals of care a "reasonable" patient would have. The intervention in question may prolong the patient's life but at a quality level that is unacceptable to the patient.<sup>7,15</sup>

### Shared-decision Making

A decision-making process that assigns equally important, but *different* roles to patient and physician: Only the patient can know what

outcomes are acceptable to her, and quality-of-life matters should never be assumed by the physician. For example, to some patients it might be perfectly acceptable to spend the rest of their lives in a nursing home without the ability to care for themselves, whereas this might be unacceptable to others. In shared decision making, it is the patient's role to delineate quality-of-life metrics that are deemed acceptable to her. It is the physician's task to only offer interventions that are compatible with the patient's stated goals. If the intervention in question is unlikely to yield an outcome that is compatible with the patient's desired goals, then the physician should deem the intervention contraindicated based on the principle of nonmaleficence. It is therefore the patient, not the physician, who defines her own threshold for value-based futility. The physician, out of respect and consideration for the patient's goals and values, should make medical recommendations for treatments and interventions that are likely to result in an outcome desired by the patient when possible.<sup>16,17</sup>

### Clinical Scenarios

We focus on 3 key stakeholders for the analysis of any code scenario—that is, the patient (autonomous choices and expectations), the physician (professional judgment), and society (availability and just distribution of resources). We delineate 8 distinct mathematical possibilities (Table 1). Options that represent scenarios with potential ethical tensions are highlighted in red. The abbreviation "DNR" is used to designate "Do Not Resuscitate" status in our analysis.

### Disclaimer

For the purposes of our discussion, we assume that the patient's wishes are accurately represented by the patient's family when the patient does not have decisional capacity. We address "patient" and "surrogate decision maker" under the heading "patient wishes." We acknowledge that ethics literature does show significant variation in patient preferences as expressed by the patient and patient preferences as represented by surrogate decision makers. However, this distinction is beyond our current scope of analysis.

### Ethical Analysis

Options with no inherent ethical tensions are not discussed. Options with ethical tensions are analyzed applying our definitions to the corresponding relevant clinical scenario.

### Scenario #1

The patient wishes to be full code and adequate resources are available. However, the physician's recommendation is DNR based on her understanding of the patient's prognosis.

To understand the ethically appropriate response to this scenario, we must first examine the subtleties of our definition of patient autonomy. At least 3 limits to patient autonomy have been recognized.<sup>18–20</sup> Foremost, even the most informed discussions fall short in transferring the knowledge, experience, and medical insight to

**TABLE 1.** Possible Combinations of Code Determinants

Scenarios	Patient's Wish	Physician Recommendation	Resource Availability
1.	Full code	DNR	Available
2.	Full code	DNR	Not available
3.	DNR	Full code	Available
4.	DNR	Full code	Not available
5.	DNR	DNR	Available
6.	DNR	DNR	Not available
7.	Full code	Full code	Available
8.	Full code	Full code	Not available

patients that physicians acquire from medical school and residency training often followed by subspecialty fellowships.<sup>12</sup> Second, the patient facing a decision is ill, quite literally *diseased*.<sup>21,22</sup> To expect a patient affected by psychological or physical pain to make a dispassionate and rational decision is unrealistic. Finally, patient autonomy is paradoxically limited by societal constraints that protect autonomy since the rights of any 1 person are equally important to those of any other person in the same society.<sup>23</sup>

The concept of patient autonomy was foundational to the rights and protections established for human research subjects after the atrocities committed by Nazi researchers on prisoners.<sup>24</sup> These rights—which are detailed in the Helsinki Declaration—had a profound influence on the evolution of patient rights in the United States.<sup>25</sup> It is important to recognize that the emergence of patient autonomy as legally enforceable in the practice of medicine promoted patient autonomy as a *negative right*. Patient autonomy as a negative right means that patients have the right to *refuse* care. Performing a surgery without a patient's informed consent, for example, is considered battery.<sup>12,26</sup> Patient autonomy as a *positive right*, on the other hand, emerged with healthcare consumerism and is not supported by medical ethics. No ethical reasoning concludes that patients have a right to demand a course of care when the treating physician's medical judgment does not justify the treatment in question for the patient.<sup>18</sup>

Cardiopulmonary resuscitation is an intervention like any other: it carries with it risks, benefits, and alternatives.<sup>27,28</sup> Surgeries, invasive procedures, or life-sustaining measures such as extracorporeal membrane oxygenation are only offered to candidates who will likely benefit from the intervention. In the same way, CPR should only be offered to patients who are likely to benefit. This analysis becomes even more ethically compelling when we consider the possible suffering the intervention may cause, violating our obligation for nonmaleficence.<sup>29–31</sup>

It should be remembered that futility may be quantitative or qualitative (defined above). Quantitative futility is objective and implies loss of life despite any intervention. Qualitative futility, on the other hand, is subjective and should be determined in terms of the patient's expressed goals and values. If being in a permanent vegetative state is an acceptable outcome for a patient, then the treating physician's threshold to recommend CPR may well be different than if the only acceptable outcome for a patient is independent living. Shared decision making appropriately takes the patient's subjective values and goals into account while relying on the physician's learned, professional judgment regarding whether the intervention in question will deliver the desired outcome.

### Recommendation

It is our ethically considered recommendation that if in the medical judgment of the treating physician a patient is unlikely to benefit from CPR whether in terms of quantitative or qualitative futility, then the intervention should be considered medically nonbeneficial. An intervention—including CPR—that is deemed medically nonbeneficial should not be offered. This recommendation considers patient autonomy as a negative right and considers both beneficence and nonmaleficence as imperatives on the part of the physician.

### Scenario #2

This scenario essentially represents the one detailed in Scenario #1 with the addition of resource constraints. Our ethical analysis, however, makes no distinction between these 2 scenarios. The availability of resources is irrelevant when, in the professional judgment of the treating physician, the intervention of CPR is deemed medically nonbeneficial. Our recommendation for Scenario #1 remains the same for Scenario #2.

### Scenarios #3 and #4

These options may be discussed together as they both represent scenarios in which the patient chooses to be DNR despite her physician's recommendation to receive CPR. Honoring the patient's choice for foregoing resuscitation is the ethically appropriate use of honoring patient autonomy. In this instance, patient autonomy represents the patient's negative right to refuse any intervention. The right to refuse unwanted physical attention of any kind, including CPR, is an ethical obligation a culture that prioritizes individual freedom must hold in unparalleled respect.

### Recommendation

It is our ethically considered recommendation that patients who have voluntarily and with full understanding of the consequences and alternatives of refusing CPR choose to be DNR may do so without any adverse consequences to their care otherwise.

### Scenario #7

In this scenario, although there is no discord between patient wishes and physician recommendation, the ethical tension arises from the concern that performing resuscitation on a COVID+ patient may 1) place the medical team at risk of contracting the infection and 2) use scarce resources for a COVID+ patient that might otherwise be allocated.

As in all cases, the assessment starts with the treating physician determining whether or not the patient is a candidate for resuscitation separate from the coronavirus infection both based on patient wishes and on the likelihood of medical benefit. If the patient is a candidate, then the coronavirus infection raises additional considerations. Preparation for these cases should include 1) a review of hospital policy for performing CPR on patients with conditions that put caregivers at additional risk and 2) an assessment of the hospital's PPE resources for facing the COVID-19 pandemic. The code teams should be fully informed about the additional risk associated with the COVID-19 pandemic. All feasible modifications to routine resuscitation methods that would increase the safety of the caregivers should be made (eg, limit on the number of caregivers in the room, monitor the PPE being used by code team members as they enter the room, use additional ways to cover the patient so as to limit exposure).

### Recommendation

If there is sufficient PPE and there are sufficient caregivers who are appropriately prepared, then it would be ethically justified for resuscitation to be attempted. If PPE is inadequate and the code team deems the patient to be actively and highly infectious, it would be ethically acceptable to not perform CPR in an effort to preserve one's own health as no medical professional can be expected to perform tasks tantamount to suicide missions.<sup>32</sup>

### Scenario #8

The ethical tension in this scenario arises not from a disagreement between patient wishes and physician recommendation, but from a lack of necessary resources. This scenario is most evident among the ethical issues we are being forced to face amidst the current COVID-19 pandemic. As a first step to addressing this ethical dilemma, it is imperative to recognize that the scenario in question does not in fact represent either Scenario #1 or Scenario #2. If the true ethical tension is between honoring a patient's positive autonomy and a physician's obligation to avoid maleficence, then our recommendations for Scenarios #1 and #2 should be applied.

When the patient wishes to undergo CPR and the physician's medical judgment is that the patient will likely derive benefit from

the intervention but resources are not readily available, the concept of justice should be introduced into the calculus. Algorithms for the allocation of scarce resources are numerous and readily available in our current COVID-19 pandemic.<sup>6</sup> These algorithms first take into account medical prognosis followed by the patient's social claim to the scarce resource (such as younger age in some cases, or the patient's professional abilities that may save further lives once the patient recovers). Some algorithms advocate a first-come first-serve priority while others propose enacting a lottery system.<sup>33</sup>

### Recommendation

Regardless of the institutional system used, it is ethically imperative that the algorithm is applied to all patients in the system and is done so transparently to the public to maintain societal trust in the medical system and to reduce the likelihood of corruption. Solutions that rely on individual physicians or pairs of physicians who may have conflicts of interest with respect to certain patient outcomes should be specifically avoided.

### Complicating Nuances Regarding Codes

1. How is responding to a patient who is coding different from responding to a patient who is decompensating? A code applies to a set of ACLS interventions done when a patient's cardiac rhythm either stops or is insufficient to support life. A code does not include intubating a patient for decompensating respiratory status in the same way a code does not include starting an epinephrine drip for a hypotensive patient. Both of these interventions are done to prevent a code (ie, a cardiac arrest) and are outside the scope of a DNR order.
2. What if a patient states that s/he wants to be shocked but not intubated in response to cardiac arrest? If attempting resuscitation in the event of cardiac arrest is consistent with the patient's goals and values, then all ACLS protocols are administered according to the code team's medical judgment. ACLS protocols should not be presented to patients and/or family members as a menu of separate decisions. If the patient is clear that under no circumstances would s/he want to be intubated, then a DNR order is written and, in the event of cardiac arrest, no resuscitation is attempted.
3. What if the patient states that s/he wants to be intubated for respiratory failure, but not to undergo CPR in the event of cardiac arrest? A trial of intubation and mechanical ventilation in the event of respiratory failure can be consistent with a patient's goals and values, even if the patient does not wish to be resuscitated in the event of full cardiac arrest. In this case, a DNR order is written in the event of cardiac arrest, and it is specified that intubation should be initiated in the event of respiratory arrest.
4. What if the patient has a living will? Discussions with patients and their families should certainly include information available in the patient's living will. The "Goals of Care" template (see Appendix, <http://links.lww.com/SLA/C445>) provides a consistent framework for and documentation of the treating physician's discussion of goals, expectations, and outcomes with patients and/or family members when decisions to withhold or withdraw life-sustaining treatments are being considered. Patient preferences that have been communicated through a living will are highly relevant to but not a replacement for the "Goals of Care" communication and decision-making process. To the contrary, the discussion with patients and/or their families that is prompted by the "Goals of Care" template may result in correcting medical inaccuracies and misunderstandings that are often written into living wills or held by patients and/or their families.

### DISCUSSION

Whether addressing code status in the midst of a pandemic or during normal times, the initial approach should be the same. If a patient refuses CPR, then this choice should be respected based on the patient's autonomy. If a patient would accept CPR, then this intervention should be offered to her if and only if the treating physician's professional, medical judgment is that this intervention will in fact result in an acceptable outcome to the patient and is in line with her goals and values. If, on the other hand, the treating physician concludes CPR will result in either quantitative or qualitative futility, then the intervention should be deemed medically nonbeneficial and not offered. Medical professionals honor the ethical obligations of beneficence and nonmaleficence when they do not offer nonbeneficial interventions to patients.

If both the patient and the physician favor CPR as a reasonable medical measure but resources are finite and limited, then systematic and transparent allocation algorithms should be employed to ensure the just allocation of scarce resources. Any action that entails ethical tension should be clearly communicated to all stakeholders, especially to patients and their families. Mitigating loss by utilizing palliative resources may be beneficial and should be considered. Transparency and frequent communication should characterize all medical interactions that entail ethical tensions.

Our analysis assumes the availability of acceptable personal protective equipment while performing CPR. No physician or healthcare provider is obligated to put his or her own life in direct jeopardy in the absence of adequate safety measures. Recommended action in these cases is left to the individual judgment of the treating provider.

### CONCLUSION

CPR is an intervention like any other, with attendant risks and benefits and utilization of resources. Taking into consideration the patient's goals and values, the likelihood of medical benefit, and the availability of scarce resources, there are 8 possible courses of action one might take when a patient codes. Our ethical analysis advocates for a systematic approach to codes that respects all 3 of these important ethical considerations in caring for the critically ill.

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