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CURVES: A Mnemonic for Determining Medical Decision-Making Capacity and Providing Emergency Treatment in the Acute Setting

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The evaluation of medical decision-making capacity and provision of emergency treatment in the acute care setting may present a significant challenge for both physicians-in-training and attending physicians. Although absolutely essential to the proper care of patients, recalling criteria for decision-making capacity may prove cumbersome during a medical emergency. Likewise, the requirements for providing emergency treatment must be fulfilled. This article presents a mnemonic (CURVES: Choose and Communicate, Understand, Reason, Value, Emergency, Surrogate) that addresses the abilities a patient must possess in order to have decision-making capacity, as well as the essentials of emergency treatment. It may be used in conjunction with, or in place of, lengthier capacity-assessment tools, particularly when time is of the essence. In addition, the proposed tool assists the practitioner in deciding whether emergency treatment may be administered, and in documenting medical decisions made during an acute event. *CHEST* 2010; 137(2):421–427

Abbreviations: HCAT = Hopkins Competency Assessment Test; MacCAT-T = MacArthur Competence Assessment Tool for Treatment

Editor's note: To view articles included in the core curriculum of the ongoing *Medical Ethics* series, visit <http://chestjournal.chestpubs.org/cgi/collection/medethics>. —Constantine A. Manthous, MD, FCCP, Section Editor, *Medical Ethics*

The evaluation of medical decision-making capacity is an essential skill used by all physicians in the routine and proper care of patients. Capacity is distinguished from competence, in that a patient's decision-making capacity is judged clinically by a physician,

whereas competence and incompetence are legal judgments made by a judge.¹ Failure to be aware of or recall the essential criteria for decision-making capacity can lead to incomplete and perhaps incorrect assessments, or premature consultation (eg, psychiatry, ethics committee).² A review by Applebaum³ has offered guidelines for the assessment of patient decision-making capacity in the non-emergent setting, but to the best of our knowledge, little has been written to date about the rapid assessment of capacity in emergency situations. Emergencies present a particularly challenging situation for assessing decision-

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making capacity, as altered mental status is frequently a confounding factor. Stakes may be high, with the absence or delay of treatment quickly leading to loss of life or limb. In an emergency, therefore, it becomes imperative that decision-making capacity be assessed and documented in an efficient manner. This may present a significant challenge for both physicians-in-training and attending physicians. Discord with

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regard to determination of decision-making capacity may be commonplace among medical staff, despite access to the same clinical information and laboratory data. Although several tools exist that can assist in the evaluation for capacity,^{4,5} they frequently prove cumbersome, time consuming, and difficult to perform in an acute care setting.

Of equal importance to determining capacity are recognition of a true medical emergency and recollection of the criteria required to provide emergency treatment in the absence of informed consent. Emergency treatment (also known as “emergency privilege” or “implied consent”) is defined as the provision of medical care to which a reasonable person would consent, in situations in which: (1) the patient is not able to express his or her own preferences, (2) immediate action is required to prevent loss of life or limb, and (3) no surrogate decision maker is available.^{6,7} These criteria must be quickly recalled to enable swift provision of appropriate medical care. Emergency treatment is one of the few situations in which a physician can act unilaterally in making a medical decision without informed consent.

It should be noted, however, that emergency treatment without informed consent should only be considered in situations in which the patient will suffer imminent harm in the time that it would take to find or appoint a surrogate decision maker. Examples of important (but non-emergent) decisions include placement of a gastrostomy tube for nutrition, a tracheostomy for prolonged ventilatory support, or elective surgery for an incapacitated patient. These would not qualify as true emergencies, given that there would likely be sufficient time to obtain informed consent, and the patient would not be imminently harmed while a surrogate is sought.

This article presents two cases that illustrate the need for quick assessment of decision-making capacity and the criteria for emergency treatment. Each contains a life-threatening medical emergency in which time is of the essence, but the decision-making capacity of the patient is in question. The case descriptions unfold as they would in the clinical arena, in which information is often learned incrementally. After discussion of the cases, we propose a mnemonic to facilitate the timely and thorough evaluation and documentation of decision-making capacity; the mnemonic also addresses the requirements for provision of emergency treatment.

CLINICAL CASES

Case 1

Ms S is an 84-year-old woman with a history of severe COPD. She presents with a 1-week history of progressively worsening shortness of breath, cough, increase in

clear sputum production, and wheezing. On examination, the patient appears *in extremis*. Her respiratory rate is 28, and she is using accessory musculature to breathe. There are diffuse, quiet wheezes in her lungs bilaterally, with an ominous lack of air movement. An arterial blood gas reveals a markedly decompensated respiratory acidosis (pH 6.98, PCO₂ 120 mm Hg, HCO₃ [serum bicarbonate] 35 mmol/L), and the overall picture appears consistent with a life-threatening COPD exacerbation. Hospital admission with either non-invasive positive pressure ventilation, intubation, and/or comfort care measures are presented to the patient as the possible responses to her situation. However, the patient states “I want to die at home. Please, let me go home.”

The doctors involved are faced with the following questions: Should the patient be discharged home, with the knowledge that this will likely result in her death? Does this patient have adequate capacity to make this decision?

Case 2

Mr M is a 53-year-old morbidly obese man who was admitted for suspected obesity hypoventilation syndrome and obstructive sleep apnea. The on-call physician is called to his bedside emergently, after he was found unresponsive to verbal and noxious stimuli. Arterial blood gas reveals a combination of hypoxia (PaO₂ 49 mm Hg, arterial oxygen saturation 80%) and decompensated respiratory acidosis (pH 7.19, PaCO₂ 101 mm Hg, HCO₃ [serum bicarbonate] 34 mmol/L). On lung examination, there is a complete lack of respiratory effort, and there are no breath sounds. The patient is ventilated with a bag-valve mask at maximal supplemental oxygen, and he partially arouses, but remains groggy. Respiratory effort is somewhat restored, to a rate of 6 breaths/min. Bedside oximetry increases to 89%. However, the patient’s head begins to bob, and it appears that he will soon lose consciousness. Anesthesia is paged for a stat intubation.

Two minutes pass, and anesthesia arrives. The patient has become more awake and is looking around the room. His pulse oximeter is now reading 93%, although respirations remain shallow and infrequent. Given his significant respiratory acidosis, the medical team prepares for intubation. At this time, the patient shouts “I don’t want a tube! No tube!”

The doctors involved are faced with the following questions: Should this patient be intubated? Does he have the capacity to decide his course of therapy?

THE DILEMMA

In the current culture of medicine, respect for autonomy is a core bioethical principle. There is broad

consensus that a patient should be in control of his or her own destiny for health-care decisions. For a choice to be autonomous, it must be intentional, made with understanding and without controlling influences.¹ Informed consent, then, is one application of this principle in the practice of medicine and requires the participation of both the patient and the physician. The physician is responsible for explaining the proposed intervention and his or her reasons for making the recommendation, as well as disclosing the risks, benefits, and alternatives. The patient is expected to understand, weigh the options with respect to his or her own values and goals, and express a preference to the physician.^{8,9} The patient who is able to perform these tasks is said to have “medical decision-making capacity.”

Although the physician is responsible for ensuring that autonomy is respected through the process of informed consent, he or she also has a duty to promote the well-being of patients and protect them from harm. If a patient is unable, for whatever reason, to exercise informed consent, it is the physician’s responsibility to identify an appropriate proxy decision-maker, typically a spouse, adult child, or sibling. If no such proxy decision maker is available, the physician must proceed with the patient’s best interests in mind.

In some cases, a decision made by a patient may not be in his or her own best interests from the physician’s point of view. If the patient has decision-making capacity but seems to be making a poor choice, the physician should explain his or her concerns and propose what he or she thinks should be done and why. In addition, although this should be approached with care, it may be appropriate for the physician to attempt to persuade the patient about what should be done. If the patient continues to refuse what is recommended, the physician should yield to the competent patient’s decision. Conflict may arise when a patient with questionable decision-making capacity makes a choice that puts his or her well-being at risk. In this circumstance, two separate issues must be assessed:

1. Does the patient have adequate decision-making capacity?
2. Are requirements met for the practitioner to provide emergency treatment without informed consent?

We propose a mnemonic, CURVES (Choose and Communicate, Understand, Reason, Value, Emergency, Surrogate), to aid in the emergency evaluation and management of such conflicts (Fig 1).

DECISION-MAKING CAPACITY

Decision-making capacity is a medical term that affirms a patient’s ability to make informed decisions about his or her health care at a particular point in time.¹⁰ Without it, there can be no informed consent. Despite the importance of decision-making capacity in a patient’s care, there is currently no widely accepted standard for its evaluation.¹¹ Several tools exist for the assessment of decision-making capacity, including the MacArthur Competence Assessment Tool for Treatment (MacCAT-T) and the Hopkins Competency Assessment Test (HCAT).^{4,5,12}

The MacCAT-T is a semi-structured interview customized to the patient’s condition, which includes discussion of the patient’s illness, the recommended treatment of that illness, and the treatment’s benefits, risks, and alternatives. At the end of the interview, the physician assesses the patient’s understanding, and the patient makes a choice. The HCAT, on the other hand, requires the examiner to read to the patient an essay about informed consent and advance directives. The HCAT may have to be repeated up to three times with different versions of the essay for patients with low levels of education or understanding. The physician then assesses the patient’s understanding of that essay through the administration of a six-question quiz. It is tailored neither to the patient’s specific condition nor to the level of capacity necessary to make a specific decision (ie, the “sliding scale”

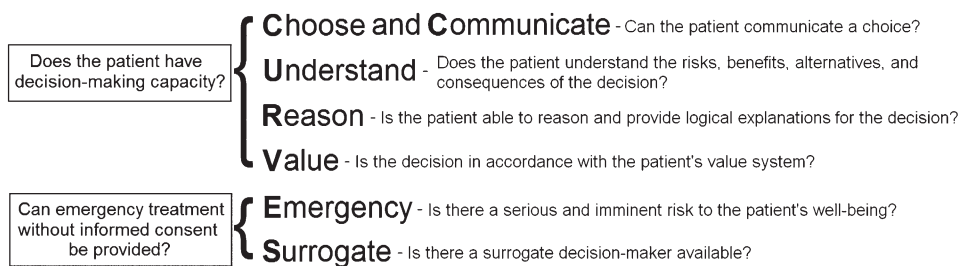


FIGURE 1. Mnemonic for the assessment of decision-making capacity and provision of emergency treatment. A patient lacks capacity if any of the prerequisite abilities (to choose and communicate, understand, reason, or value a decision) are absent. If a patient lacks capacity in an emergent situation and no surrogate decision maker is available, then emergency treatment without informed consent may be provided for a medically warranted course of action.

concept of capacity), but it has been demonstrated to correlate well with formal psychiatric evaluations of capacity.

Although both tools have been validated and are excellent in the assessment of a patient's capacity in the non-emergent setting, both have shortcomings in emergencies. In an emergency, the patient may be unable or unwilling to listen to a short essay on informed consent and advance directives, as required by the HCAT, which may seem to be an abstract discussion unrelated to his or her current emergency condition. In addition, the HCAT does not easily lend itself to memorization for quick use in an emergency. Furthermore, both the HCAT and MacCAT-T require a significant amount of time to administer. Reading the HCAT essay takes time, and the MacCAT-T regularly takes 15 to 20 min to perform. In the acute setting, the physician may not have the luxury of either time or complete patient cooperation. Therefore, we suggest our mnemonic for the rapid evaluation of the four core abilities assessed by the HCAT and MacCAT-T, which are required for adequate decision-making capacity.^{1,5,12-15} These are the abilities to:

- **C** – Choose and Communicate. Patients must be able to choose from among the options before them. Furthermore, their choice must be made without coercion or manipulation, although appropriate persuasion is permitted.¹ Each patient must be able to communicate his or her preferences, whether verbally, in writing, or through the use of signals.
- **U** – Understand. The patient must understand the relevant risks, benefits, alternatives, and consequences of any planned intervention or course of action.
- **R** – Reason. The patient must be able to reason and provide adequate explanations for accepting or declining each intervention.
- **V** – Value. The patient's decision should be consistent with his or her value system. Physicians should strive to be aware of and understand the patient's values, and they must also be aware that patient values and goals may change with time.

Ideally, a patient's preferences will endure over weeks, months, and years. Communication with a patient's family or primary practitioner is instrumental in this determination. However, circumstances may change, and people may naturally adjust to those new circumstances. Thus, any given decision or preference may not endure. Inconsistent or frequently-changing choices justifiably raise concerns about decision-making capacity (or adequate understanding), and therefore warrant closer scrutiny.

It is important to note that many physicians and ethicists support the concept of a sliding scale in the determination of medical decision-making capacity.^{1,9,16-18} Briefly, this is the notion that the level of evidence required to confirm decision-making capacity varies on a continuum with the benefits and risks associated with the clinical circumstance. With respect to the situation in which a patient is refusing recommended care, circumstances involving lower risk where the recommended care is of marginal benefit require a lower threshold of decision-making capacity (eg, drawing serial hematocrits to monitor a mild-to-moderate anemia in the setting of a small GI bleed). On the other hand, circumstances involving high risk and low or unclear benefit (eg, use of an unproven, experimental chemotherapy agent) or high benefit but low risk (a lumbar puncture for suspected bacterial meningitis) require the highest evidence of decision-making capacity. Thus, decision-making capacity must be assessed for each decision to be made, and insufficient capacity to make one decision does not imply inadequate capacity to make other decisions. We recommend that our mnemonic be used in accordance with this sliding scale concept.

EMERGENCY TREATMENT WITHOUT INFORMED CONSENT

If the patient lacks the ability to choose and communicate, understand, reason, or value (to a degree consistent with the benefits and risks of the decision), adequate decision-making capacity is not present. In such cases, the physician must next determine if emergency treatment should be rendered, provided that two additional requirements are met^{6,7,19}:

- **E** – Emergency. A true emergency exists, meaning that there is serious and imminent risk to life or limb.
- **S** – Surrogate. No surrogate decision maker or legal document detailing the patient's desires is immediately available, and there is no time to obtain an ethics consultation.

When both of these conditions are present in the context of lack of medical decision-making capacity, a physician may intervene without explicit informed consent, as long as the proposed intervention would be acceptable to a reasonable person or to the patient if they were able to speak for themselves. It is important to note that such an action does not occur in the complete absence of consent; rather, the physician is operating under the presumption of implied consent.²⁰

Alternatively, there are situations in which a patient may request life-prolonging therapy that the

physician considers ill advised (eg, a patient in hospice with terminal cancer who requests intubation). In these cases, it should be noted that the same criteria apply for decision-making capacity and that the sliding-scale concept of capacity is particularly relevant. However, the threshold for overriding the patient's decision is higher, given the potential harm that may occur if his or her wishes are not enacted. Under these circumstances, temporary treatment measures may be initiated (eg, noninvasive positive pressure ventilation) while additional information is gathered and/or a surrogate decision maker is sought. If it is concluded after further consideration and discussion with the appropriate decision maker that the intervention was, in fact, ill-advised, the intervention may be withdrawn.

When situations arise in which patients are requesting interventions that physicians consider inappropriate, it is important to make the distinction between ill-advised and futile therapy. This difference is often difficult to delineate. Briefly, ill-advised therapy is treatment that may cause the patient undue harm or discomfort, while providing little chance of benefit. The definition of medical futility has been the subject of ongoing debate, but has typically referred to the inability of a medical intervention to fulfill any of the patient's expressed goals and/or achieve any beneficial physiologic outcomes. In situations of true physiologic futility (eg, performing an emergency operation in a patient who would not survive surgery), the physician is not obligated to institute life-sustaining measures. When uncertainty exists as to whether the treatment is futile on physiologic grounds or because it would fail to meet the goals of care expressed by the patient when he had decision-making capacity, it is prudent for the physician to institute the treatment, even if seemingly ill-advised at the time. After instituting the intervention, it would then be a matter of open communication and negotiation between the physicians and the appropriate decision maker (either the patient if he has regained capacity or his designated surrogate if he has not) to resolve any ongoing conflicts.²¹ Adequate support for patients, their families, and medical staff is needed when attempting to differentiate ill-advised from futile treatment.

ASSESSMENT OF CAPACITY, DOCUMENTATION, AND CASE RESOLUTION

The assessment of a patient's capacity to make medical decisions is a learned skill that requires training and practice.²² In addition, optimal interviewing skills and good clinical judgment are essential. Before the assessment is made, the patient should first be informed about the purpose of the interview, and, whenever possible, provided an opportunity to learn

about his or her medical issues. When assessing a patient's ability to understand and reason, the patient should be encouraged to speak in his or her own words. This ensures that the patient is processing and assimilating information, rather than simply repeating it. The patient's thought process should be checked frequently, using open-ended, probing questions.^{3,22} For example, the following questions could be asked to help assess whether a patient has sufficient ability to understand and reason about what is being discussed:

- "In your own words, please tell me about what we've just discussed, regarding your current illness and the decisions we need to make."
- "What do you think will happen if you receive (or do not receive) the intervention?"
- "What do you understand to be the alternative(s) to the recommended plan?"

Assessing whether a patient's decision is consistent with his or her values can be challenging, and frequently involves corroboration of previously-stated preferences with either family members or other physicians. Discussions with a patient's family members should not be solely directed toward their ability to act as surrogate decision makers, as family members may also provide insight regarding a patient's value system prior to hospitalization. Patients or surrogates could be asked the following question to help determine to what extent their position or decision is congruent with the patient's values:

- "How did you reach your decision to accept (or reject) the intervention, and what is guiding your thinking about this?"

In addition to performing an assessment, it is imperative that physicians diligently record all portions of the patient evaluation regarding decision-making capacity, the presence or absence of a surrogate decision maker, and the conditions under which emergency treatment without informed consent is being provided. The CURVES mnemonic can further assist the practitioner by providing a framework for documentation. The assessment of capacity, example documentation of the physician's evaluation, and resolution of each case are shown below.

CASE 1: REFUSAL OF HOSPITAL ADMISSION IN A LIFE-THREATENING COPD EXACERBATION

Assessment of Capacity

Ms S is found to be alert, oriented, and vocal. The different courses of action that may be taken (noninvasive positive pressure ventilation, intubation, and medically-supported comfort care measures) are

presented to her, and she is able to repeat each option, using her own words. She states, "I don't want a mask or tube. I don't want any machines. I just want to die in my own home." She voices understanding that leaving the hospital would result in worsened breathing and possibly death. The patient's adult children, who were eventually found in the ED waiting room, corroborate both the reasoning process and her decision as consistent with previously stated preferences and values.

Example Documentation

Below, we present one way case 1 could be documented using our CURVES mnemonic to help structure the information:

On my evaluation, Ms S possesses decision-making capacity for the following reasons: She is able to make a choice and communicate it through clear vocalization and indicates that she is able to understand her options by repeating them in her own words. Further, Ms S communicates her understanding that the likely consequences of her refusal include worsening respiratory failure or even death. She is able to provide her reasoning for refusal of hospital admission, stating that she wishes to avoid artificial life support measures and that she does not want pain-relieving medications or respiratory treatments. Her choice is in accordance with her own value system, and is subsequently corroborated by her adult children. Despite the presence of a true emergency, the facts of this case lead me to conclude that Ms S possesses decision-making capacity and that her autonomy must be respected. She will be discharged home, in accordance with her wishes.

Case Resolution

Ms S should be allowed to return home, even if that means she will die there.

CASE 2: REFUSAL OF INTUBATION IN HYPERCAPNIC RESPIRATORY FAILURE

Assessment of Capacity

Mr M is able to slowly recite his name, birth date, and location. He explains his refusal of intubation by stating: "I just don't want it." He mumbles when asked to repeat, in his own words, the risks, benefits, or alternatives to intubation. He cannot explain the consequences of his refusal. Review of the patient's admission note reveals that he previously desired intubation, if medically necessary. No surrogate decision-makers are immediately available.

Example Documentation

On my evaluation, Mr M does not currently have adequate decision-making capacity. He is able to verbalize a choice (refusal of intubation), but is unable to adequately under-

stand the risks, benefits, or alternatives of intubation. He cannot name any consequences of refusal. He is only able to repeat "I just don't want it," and cannot state any reasons for this choice. In addition, we have learned that the patient's current preference not to be intubated conflicts with his preferences about this issue noted in admission documentation. This contradiction raises additional concerns about the patient's decision-making capacity. A true emergency currently exists, with the possibility of impending serious injury or death from respiratory failure. No surrogate is immediately available. I am, therefore, providing emergency treatment and intubating the patient.

Case Resolution

Emergency treatment in the absence of informed consent should be provided, and Mr M should be intubated.

SUMMARY

In the practice of acute care medicine, physicians should adhere to the principle of respect for autonomy through the process of informed consent. A physician's duty to benefit a patient and protect him or her from harm may come into conflict with that individual's autonomy when the patient chooses a course of action that appears to be counter to his or her medical best interests. One of the first tasks in these situations is for the physician to determine whether the patient has the capacity to make an autonomous choice.

The process of approaching, evaluating, and documenting decision-making capacity in the emergency setting may be facilitated by recalling our proposed mnemonic, CURVES. The physician assesses decision-making capacity by determining the patient's ability to: **C**hoose and **C**ommunicate a course of action; **U**nderstand the intervention's risks, benefits, alternatives, and consequences; **R**eason and provide logical explanations for the choice; and apply his or her **V**alues to the decision. If these functional abilities are intact, then under most circumstances, the patient's preferences should be honored. If any of these functional abilities are lacking, and the patient is deemed not to have adequate decision-making capacity, then the physician must determine if a true **E**mergency exists and assess availability of a **S**urrogate decision maker. If an emergency situation is present and a surrogate cannot be found in a timely manner, then emergency treatment may be provided for a medical condition warranting intervention.

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