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Editorial

Determining code status on inpatient psychiatry

1. Shift from paternalism to autonomy

For most of the history of Western medicine, beneficence was the guiding principle for medical care. Physicians alone determined what would benefit a patient, and patients were often not asked for their consent—or even informed—prior to receiving whatever intervention their physicians thought was best [1]. This paternalistic model drastically changed in the early part of the twentieth century, as patient autonomy replaced beneficence as the dominant principle. The requirement of informed consent came to be codified in the law [2–4] and professional expectations [5]. In the latter part of the century, a patient's right to refuse even life-sustaining medical treatment (LSMT) was also recognized [6,7].

The most common form of LSMT that was refused was cardiopulmonary resuscitation (CPR), which was introduced into medical practice in 1960 and was initially felt to be extremely effective. In the first study reporting its use, 70% of patients with witnessed intraoperative arrests survived to discharge [8]. The context was particularly important, given that the arrests to some degree were anticipated—at least insofar as they were known complications of invasive procedures—and thus the team responding to them was both proximate and prepared.

Without supporting data—indeed, without replication of the original highly optimistic reports of recovery following witnessed intraoperative arrests [9]—the application of CPR soon expanded beyond the operating room to the rest of the hospital. It quickly became apparent, however, that the outcomes in these contexts were not nearly as favorable. Recent studies have found that CPR leads to survival to discharge in only about 25% of in-hospital cardiac arrests, with up to one-third of survivors experiencing decreased quality of life or functional status [10].

Recognizing that CPR was the only procedure requiring a physician's order *not* to occur, the American Medical Association (AMA) specifically recommended against CPR in circumstances where it "may represent a positive violation of an individual's right to die with dignity" [11]. Do Not Resuscitate (DNR) orders were introduced into medical practice soon thereafter, thus strengthening a patient's right of refusal [12]. Ultimately, with the passage of the Patient Self Determination Act in 1991—which required hospitals to inquire about the existence of and provide assistance in formulating Advance Directives (ADs) [13]—the need to clarify every inpatient's "code status" was firmly established.

2. Altered paradigms in the context of self-harm

One notable exception to the primacy of patient autonomy is in the aftermath of a suicide attempt where the prevailing ethical principle shifts to "presumption of rescue," based on the classification of suicide as an irrational, and thus not fully autonomous, act [14]. Physicians are therefore tasked with responding based on the patient's best interest, which is commonly interpreted to mean prolonging life. This extends to situations where a patient may have previously completed an AD refusing LSMT, as forgoing treatment could be viewed as abetting suicide [15].

DNR orders are also disregarded when the patient's condition is the result of self-inflicted injury. Virtually all state emergency response protocols instruct providers to initiate CPR—regardless of a Physician Order of Life Sustaining Order (POLST) indicating otherwise—in responding to a suicide attempt. As Schmidt and colleagues note:

> Generally, we intervene with the suicidal patient based on the assumption that the person is suffering from a mental illness that impairs judgment. The assumption is usually correct, with 90% of suicides being found on postmortem psychological review to be associated with mental illness…the physician assumes that he or she is acting beneficently in preventing harm from coming to the patient, who is incapable of making a rational choice [16].

The underlying rationale of such policies is to make suicide more difficult to complete. After all, if a patient wanted to maximize the probability of a "successful" suicide, he might complete an AD specifying his request for no intensive treatments. If such a document were honored, he wouldn't have to end his life to "succeed." Rather, he would simply have to inflict sufficient harm so as to render himself dependent on LSMT, which would be forgone in keeping with his stated wishes. It is sometimes said that "closeness only counts in horseshoes and hand grenades," but if ADs and POLST were universally honored, suicidal patients who strategically planned ahead could be added to that list.

Determining the cause of a patient's cardiac arrest, therefore, determines the appropriate course of treatment. If the cause is self-inflicted, maximal treatment is indicated to avoid abetting suicide. If naturally-occurring, however, then a patient's prior refusal should be honored to avoid violating his right of autonomy.

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3. Determining the cause of a cardiac arrest

It is not always clear, however, whether a patient's clinical deterioration is due to a suicide attempt. Absent a clear declaration (e.g., a suicide note) or obvious signs of self-inflicted trauma, the precise cause of a cardiac arrest—which represents a "final common pathway" of both naturally-occurring processes and self-inflicted injuries—may be unclear. For medical inpatients, the general presumption is that cardiac arrest is naturally-occurring, which is understandable since such patients are already sufficiently somatically ill to justify hospitalization. And, while some patients on the medical or surgical units might also suffer from co-occurring mental illness, this is not the primary reason for their admission to the hospital.

Cardiac arrests on inpatient psychiatric units present a unique quandary. The probability of self-inflicted harm is higher by virtue of the fact that patients who warrant inpatient psychiatric hospitalization are generally those who pose an elevated risk to themselves or others. Many psychiatric patients also do not have any acute somatic illness, and would thus have a much lower probability of naturally-occurring cardiac arrest.

In determining the appropriate response to a cardiac arrest on an inpatient psychiatric unit, one option is to respond in real time based on specific characteristics of a given situation. Such a "conditional DNR" would withhold resuscitation unless there was visible evidence (e.g., asphyxiation, laceration) that the arrest was the result of a suicide attempt. While at first glance this may seem like an ideal compromise—honoring autonomy for a naturally-occurring event and providing rescue for a self-inflicted one—it is not practical. It would also be unreasonable to expect a code team from another floor—who have no prior knowledge of the patient—to weigh a wide variety of relevant factors (discussed in the following section), given the significant time pressure.

A more straightforward approach would be to err on the side of caution and categorically provide maximal treatment for any cardiac arrest. Such a "default full code" policy precludes the need to even inquire about code status on admission, since there is little purpose in asking about code status preference if the answer has already been predetermined by the team. This may explain why "full code, not discussed" is a more common admission code status in psychiatric patients than in medical patients [17].

Such a default policy could also reflect provider concerns about the decision-making capacity (DMC) of patients with acute psychopathology [17]. Yet even if the patient's DMC is compromised on admission to inpatient psychiatry, a previous request to forgo CPR may have come at a time of sufficient capacity and accurately reflect his values in relation to a burdensome procedure of questionable benefit [18]. A "default full code" policy thus runs the risk of inflicting unnecessary suffering on patients who might have made thoughtful and rational decisions about whether CPR was consistent with their overall goals of care.

4. Relevant factors in determining code response on inpatient psychiatry

If it is impractical to respond in real time and inappropriate to default to full code status for all psychiatric inpatients, the only remaining option is to devise a thoughtful and implementable approach to determining a patient's code status in advance of any acute event. Here it can be useful to apply Bayes' theorem, which describes the probability of an event based on conditions that might be related to that event. Mathematically, it is generally stated as the following equation:

$$P(A|B) = \frac{P(B|A)\,P(A)}{P(B)}$$

where:

- and (B) are events;
- P(A) and P(B) are the probabilities of observing A and B without regard to each other;
- P(A | B), a conditional probability, is the probability of observing event A given that B is true; and,
- P(B | A) is the conditional probability of observing event B given that A is true.

In this case, "A" represents a patient having attempted suicide, and "B" a patient experiencing cardiac arrest. The probability of a suicide attempt given a cardiac arrest (i.e., P(A | B)) can be estimated by the following:

$$\frac{\text{(probability of a cardiac arrest resulting from a suicide attempt)} \times \text{(probability of a suicide attempt)}}{\text{(underlying probability of a cardiac arrest)}}$$

The probability of a cardiac arrest resulting from a suicide attempt (i.e., P(B | A)) hinges on several factors. The first is the method of the suicide attempt. Excluding traumatic circumstances from the analysis—as these would effectively render the probability of a suicide attempt a certainty, or P(A) = 1—non-traumatic methods (i.e., ingestion or overdose) could surely cause respiratory depression or direct cardiac toxicity. The likelihood of leading to cardiac arrest is dependent on other factors, such as the patient's underlying cardiac condition as well as the time elapsed prior to team response (which might prevent full arrest from occurring).

It is therefore difficult to precisely determine P(B | A), but the remaining variable—the relative probability of a self-inflicted versus a naturally-occurring cardiac arrest (i.e., $\frac{P(A)}{P(B)}$)—is easier to estimate. In determining P(A), the patient's baseline risk of suicide (i.e., psychiatric illness, past suicide attempts, comorbidities, gender, age, family history, etc.) is particularly relevant. Immediate precipitating factors that place the patient at increased risk for self-harm (e.g., disruption in care, recent loss of job or relationship, change in or discontinuation of medications, etc.) should be taken into account. It is also important to take into consideration the extent of safety measures on the psychiatric unit that minimize the likelihood—if not eliminate the feasibility—of a serious suicide attempt.

The context of the request to forgo resuscitation is also critical. A recently-completed AD could represent a strategic action in anticipation of a suicide attempt, as in the reported case of a patient who overdosed while in the hospital and was found holding a copy of a newly completed AD requesting not to be resuscitated [18]. Geppert aptly refers to such a case—wherein the choices of the patient to request a DNR order and to commit suicide coincide in space and time—as "volitionally coterminous." This renders "the DNR order an integral aspect of [the patient's] suicide plan. The patient's wish to be DNR was thus not an independent and deliberate choice, isolated from [an] impulsive decision to commit suicide" [19].

By contrast, an AD completed in the distant past could reflect the patient's true values, especially if there were some evidence that the patient did