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Choice architecture in code status discussions with terminally ill patients and their families

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Cardiopulmonary resuscitation (CPR) was developed to reverse sudden cardiac death due to temporary or reversible insults in previously healthy patients. As with many invasive medical interventions, use spread to less and less healthy patients, to the point at which a universal default arose in most Western nations such that all patients became “full code.” Now, if a heart stops, no matter who’s heart, clinicians try to restart it with chest compressions, shocks, assisted ventilation, and powerful drugs, unless previously and explicitly instructed otherwise.¹

This full-code default makes sense on its face: armed with a therapy that might restart a stopped heart, and at a time when every second counts, we should reach for it without delay or deliberation. However, this default has come to include many patients with advanced and often terminal diseases for whom the decision to perform CPR is far more complex. In many patients with terminal diagnoses, CPR is a low-probability attempt at delaying death without affecting the underlying disease process.² Some clinicians may recoil at the prospect of providing CPR to terminal patients out of concern for non-maleficence, the ethical principle that we not inflict harm.³ Others may be concerned about patient autonomy, questioning whether choices to undergo this procedure in states of advanced illness reflect sufficient comprehension of this widely misunderstood intervention.⁴

These concerns have prompted suggestions that for certain defined populations of patients, the current opt-out approach to CPR be replaced with an opt-in approach, whereby CPR would only be provided if patients or their family members explicitly requested it.⁵ We agree with the implication of such proposals that using “nudges” like the switching of default options can have great impact on who receives CPR. However, as we describe in this essay,

we believe that top-down approaches in which the default is flipped for prospectively designated categories of patients are inferior to bottom-up approaches whereby clinicians use insights from behavioral economics to change the choice architecture of CPR discussions with individual patients and families.

Choice architecture refers to the different ways in which the same choices can be presented and the environmental conditions under which choices are made. Such context can have dramatic impacts on a broad array of choices,⁶ even influencing presumably preference-sensitive decisions such as end-of-life care choices. For example, seriously ill patients' choices to receive comfort-oriented care in real advance directives are heavily influenced by whether such options are presented as the default,⁷ and ICU physicians more quickly enact DNR orders for patients who will ultimately die when their ICU environment is busier than usual.⁷

Choice architecture interventions are best justified when (1) there is consensus regarding the optimal choice for the majority of potential choosers, (2) many choosers are nonetheless making alternate selections, and (3) there are legal, ethical, or other reasons to not simply mandate certain care delivery. The key virtue of using choice architecture to guide decisions rather than more heavy-handed (e.g., legislative) approaches is that defaults and other nudges lead choosers gently toward preferred options without limiting those options outright.⁹

Do CPR policies for terminally ill patients represent good targets for nudges? There exists a general consensus that we should not be routinely coding terminal patients who are unlikely to meaningfully benefit from CPR. We nonetheless do so with some regularity (and worse, with variable regularity across ICUs¹⁰). And yet it would be difficult, if not ethically dubious, to explicitly prohibit CPR for certain categories of patients.

Thus, because it seems appropriate to use choice architecture to improve upon the current status quo in CPR delivery, the real question regards what is the best way to do so. Two general approaches might be considered: delineating, through hospital policy or clinical guidelines, the categories of patients for whom there should exist an opt-in requirement to receive CPR (the “top-down” approach); or encouraging physicians to use insights from behavioral economics to better motivate choices to avoid CPR on case-by-base bases (the “bottom-up” approach). Although the top-down policy approach would likely be more “effective,” we believe this approach has unacceptable flaws.

First, though a shift to a default of “do not resuscitate (DNR)” for carefully selected subsets of terminal patients would not explicitly remove choices for such patients—they might “opt back in” to being full code—it may not be clear to patients and families that such a choice actually exists. Indeed, similar concerns that it may not be transparent that there was a choice to be made led the Institute of Medicine to reject an opt-out policy for organ donation in the U.S.¹¹

Second, top-down approaches require the drawing of lines that will be inherently arbitrary and insufficiently flexible to accommodate clinical nuance. For example, the presence of a Stage IV solid malignancy might seem like an adequately restrictive cutoff for a policy or

guideline. But such a demarcation ignores the significant differences between a newly diagnosed patient with a good functional status and a patient who is clearly in the final stages of the dying process. Thus, it is preferable to allow specific clinical circumstances to guide individualized bedside discussions around CPR.

Encouraging physicians to use choice architecture in these discussions with individual patients and families may optimally target those patients for whom the burdens of CPR would outweigh the benefits. Although this individualized, bottom-up approach may be implemented variably by different physicians, and may sacrifice a potentially faster correction of over-utilization of CPR, it recognizes patients' strong interests in their physicians' retaining the authority to individualize care to meet their specific needs.¹²

Physicians also value this ability to develop individualized communication strategies, but may not be sufficiently expert in behavioral economics to craft effective choice architectures. Future research should seek to identify ways in which physicians misapply nudges, and to teach physicians to use choice architecture more effectually. For now, we provide examples of how different behavioral economic principles may be translated into communication strategies around CPR for patients or families when the physician believes CPR is inappropriate (Table). We tend to use the default language, but there would be benefits from research showing which strategies best guide choice while preserving patients' or families' satisfaction with the decision-making process.

In summary, changing choice architecture is being recognized as a powerful way to improve healthcare decisions of consequence. Using choice architecture mindfully is not only ethically defensible, but indeed preferable to the alternative of allowing subconscious influences to nudge decisions in unintended ways.^{13, 14} But while we advocate for the use of choice architecture to influence CPR decisions, we believe that deploying it at the level of the individual patient, rather than at the level of institutional policy, will minimize potential harms in its applications.

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Table

Behavioral economic approaches in code status discussions

Choice architecture tool	Driving principle	Nudge towards “No CPR”
Default option	Individuals are likely to stay with a default choice or the status quo.	“In this situation, there is a real risk that his heart may stop – that he may die – and because of how sick he is, we would not routinely do chest compressions to try to bring him back. Does that seem reasonable?”
Social norm	Individuals are likely to agree with a choice that others have chosen or for which there is a broad agreement.	“Many patients in this situation would not want chest compressions if their heart stopped. Does this also reflect your mother’s wishes?”
Omission bias	Individuals are likely to view bad outcomes stemming from acts of commission as worse than those stemming from acts of omission.	“If your father’s heart were to stop, we are prepared to let him pass peacefully. But you may also instruct us to pound on his chest in an effort to restart it.”
Ambiguity aversion	Individuals are likely to favor choices with outcomes of known probabilities rather than choices with outcomes of unknown probabilities, independent of the benefits themselves.	“If her heart were to stop, we can at least take solace in the absolute certainty that she will no longer suffer. An alternative would be to do chest compressions to try to restart it, but it is highly uncertain whether that would work.”