Decision-Making Regarding CPR in Older Surgical Patients: Time for a New Approach

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ASA guidelines for perioperative management of do-not-resuscitate (DNR) orders recommend that we revisit existing DNR orders prior to surgery and modify them as needed to align with patient preferences and clinical circumstances (asamonitor.org). This “revisit and revise” or “required reconsideration” approach is a clear step beyond “automatic reversal” of DNR orders in that it preserves patients’ rights to self-determination and promotes patient-centered decision-making (Anesthesiology 1991;74:606-8). These guidelines are silent, however, regarding the vast majority of patients who present for surgery without DNR orders in place, and it is generally assumed that such patients desire to be “full code.” The aging of the United States population, a heightened understanding of age-related vulnerabilities, and a growing focus on goal-concordant care suggest it is time to revisit this approach to decision-making regarding CPR in the perioperative setting (Anesthesiology 2021;135:781-7). Our commitment to respecting patient autonomy and patient-centered care entails that we strive to identify patients at risk of poor outcomes should they undergo perioperative CPR and to elucidate their preferences regarding resuscitation, irrespective of their existing or presumed code status. CPR is more likely to be successful in the perioperative setting compared to other in-hospital or out-of-hospital contexts, but mounting evidence suggests that outcomes in a high-risk subset of surgical patients may be less favorable. For example, one recent study found an 11- and 32-fold increase in 30-day mortality following CPR for perioperative cardiac arrest among patients with ASA Physical Status IV and V, respectively (compared to ASA I and II patients) (PLoS One 2020;15:e0225939). A previous investigation demonstrated survival to discharge of 17% for ASA IV and 8% for ASA V patients following perioperative CPR (JAMA Surg 2013;148:14-21). Age and functional status also predict vulnerability to poor outcomes: survival to discharge (at any functional status) was 14% in patients greater than 85 years of age, 15% in partially dependent patients, and 11% in totally dependent patients (JAMA Surg 2013;148:14-21).

Elderly patients with functional limitation frequently have significant comorbidities, including frailty, a condition of diminished physiologic reserves predisposing to worse outcomes in a variety of settings (Anesth Analg 2020;130:1450-60). Data from other settings suggest even moderate frailty is not associated with dismal odds of survival following CPR and increased incidence of extubation failure, need for tracheostomy, and discharge to long-term institutional care (Resuscitation 2019;143:208-11; Resuscitation 2020;146:135-44; Intensive Care Med 2019;45:1742-52). In light of these data, we submit that it is not appropriate to assume that our most vulnerable elderly patients really “want everything done” based on the fact that they do not have a directive limiting treatment. The available evidence does not necessarily support the view that perioperative CPR is “inappropriate” in high-risk patients, but it does suggest that its appropriateness depends on patient-centered consideration of its risks and benefits.

In a recent issue of Anesthesiology, we and a team of authors spanning anesthesia, surgery, critical care medicine, geriatrics, law, and palliative care articulate an expanded approach to decision-making regarding CPR in older surgical patients (Anesthesiology 2021;135:781-7). We argue that the decision to engage a patient about their preferences should not hinge on whether a patient has a DNR order or other directive limiting treatment in place; like other elements of compassionate, ethical care, it should be tailored to the characteristics, circumstances, and preferences of the individual patient.

We propose an expanded approach to decision-making regarding perioperative CPR in older surgical patients based not on existing or presumed code status, but on patient-specific preferences and vulnerabilities. When caring for patients 75 years of age or greater, anesthesiologists should be attuned to documentation or evidence of conditions that indicate vulnerability to complications and poor outcomes after CPR, including age 85 or greater, ASA Physical Status IV or greater, functional impairment, and frailty. When possible, the presence of these conditions should trigger engagement with patients (or their surrogates in cases of decisional incapacity) to clarify preferences regarding perioperative resuscitation (Figure). This process should be multidisciplinary, and ideally should include not only the surgeon/proceduralist and anesthesiologist, but also a physician with a longitudinal relationship with the patient (e.g., primary care physician, geriatrician, or other medical specialist). Of course, many circumstances will make attempts to clarify code status in high-risk patients impractical or impossible. In these cases, “full code” should remain the default (Anesthesiology 2021;135:781-7).

Our proposals are designed to be compatible and synergistic with initiatives from the American College of Surgeons, the American Geriatrics Society, and other initiatives from the American College of Surgeons, the American Geriatrics Society, and other initiatives from the American College of Surgeons, the American Geriatrics Society, and other initiatives from the American College of Surgeons, the American Geriatrics Society, and other initiatives from the American College of Surgeons, the American Geriatrics Society, and other initiatives from the American College of Surgeons, the American Geriatrics Society, and other initiatives from the American College of Surgeons, the American Geriatrics Society, and other initiatives from the American College of Surgeons, the American Geriatrics Society, and other initiatives from the American College of Surgeons, the American Geriatrics Society, and other initiatives from the American College of Surgeons, the American Geriatrics Society, and other initiatives from the American College of Surgeons, the American Geriatrics Society, and other initiatives from the American College of Surgeons, the American Geriatrics Society.
As of November 24, 2021, there have been 47,916,623 total cases of severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2 or COVID-19) and 773,779 deaths in the United States (asamonitor.pub/3vkk3fs). Vaccination can potentially halt spread of the virus, prevent severe disease in individuals who develop breakthrough infections, and permit the return to normal economic and social life (JAMA 2021;325:532-3; asamonitor.pub/3yZPLRB). The Food and Drug Administration has authorized three COVID-19 vaccines for administration under emergency use authorization (EUA): Pfizer-BioNTech, Moderna, and Janssen (Johnson & Johnson) (asamonitor.pub/3rIS6PE).

Since late March 2021, the B.1.617.2 (Delta) variant of the SARS-CoV-2 virus has become the dominant variant globally (asamonitor.pub/3yZPLRB). It is more contagious, causing a surge in new COVID-19 infections, hospitalizations, and deaths, particularly among unvaccinated individuals (asamonitor.pub/3yZPLRB; J Travel Med 2021;28:taab124; J Travel Med 2020;27:tau021). Estimates of vaccine efficacy against the Delta variant vary. One study found the Pfizer-BioNTech vaccine to be 88.0% effective in preventing Delta variant infection after two doses, compared to 93.7% of the Moderna vaccine to be 76% effective in preventing Delta variant infection, and the Moderna vaccine to be only 42% effective (medRxiv August 2021). Regardless, these studies demonstrate vaccine conferred protection against infection, and other studies show significant reduction of severe disease, hospitalization, and death (asamonitor.pub/3xxMw40).

To date, over 454 million total vaccine doses have been administered in the U.S. (asamonitor.pub/1CZSXhr). Common side effects are mild and transient (e.g., injection site pain, fatigue, headache, muscle and joint pain, fever, nausea, vomiting, and lymphadenopathy). Severe side effects like anaphylaxis are extremely rare. Although all vaccines authorized under EUA are new, the likelihood of long-term side effects is extremely low (asamonitor.pub/3D3yhVF; asamonitor.pub/3o5F50N). Despite the documented safety, efficacy, and widespread availability of COVID-19 vaccines in the U.S., only 62.8% of the eligible population is fully vaccinated as of November 24, 2021 (asamonitor.pub/3CZSXhr). In response to low vaccination rates but an increasing rate of infections and deaths, federal and state public health initiatives (Public Health Reviews 2012;34:1-20).

Community-level directives require an authority to force all members to act according to the public health initiative. The authority to coerce individuals to act in specific ways is clarified by J.S. Mill, “The only purpose for which power can rightfully be exercised over any member of a civilized community, against his will, is to prevent harm to others” (On Liberty and Utilitarianism. 1993). In such a situation, the authority (e.g., government) can mandate through policy, regulation, or law that all citizens, even against their individual choice, must follow the public health initiative to prevent harm to others. For example, the police can forcibly lock a citizen into a sanitarium to prevent him/her from actively spreading tuberculosis in the community.

Public health ethics focuses on collective beneficence, nonmaleficence, and justice over individual autonomy. Justice in society involves fairly distributing benefits and burdens among people. One of several theories of justice (e.g., utilitarianism, libertarianism, communitarianism, egalitarianism, etc.) is applied to deter-