When word came out of Italy that physicians in hospitals inundated with patients critically ill with coronavirus disease 2019 (COVID-19) might have withheld ventilators from older patients to provide them to younger patients, many physicians and ethicists were shocked. The idea that the pandemic might force such painful triage decision was unnerving, of course, but doing so based largely on age would probably be illegal in many countries, and it also seemed it might fail a core ethical test of triage—efficiency, or saving the most lives possible with the available resources. Age alone is simply too blunt a predictor of benefit.

Prior to this pandemic, there had been a great deal of work on triage protocols for use in catastrophic disasters. In the US, the anthrax mailings of 2001 led the Agency for Healthcare Research and Quality to produce reports on the possible need for “Altered Standards of Care” if health systems were overwhelmed in a bioterrorism attack. In 2005, controversial decisions made by some clinicians in the aftermath of Hurricane Katrina generated a wave of work on clinical ethics in disasters (although the decisions generating the most attention were about alleged involuntary euthanasia, not triage). The looming H1N1 pandemic in 2009 sparked a series of landmark reports from the Institute of Medicine on “Crisis Standards of Care,” and as recently as November 2019, the National Academies of Sciences, Engineering, and Medicine held a 2-day workshop to review lessons learned about crisis triage in the last decade. By March 2020, multiple states were updating their crisis triage protocols to address COVID-19.

This intense prework reflected a belief that detailed crisis triage protocols should be ready in advance, to provide clear guidance and alleviate moral distress for those forced to make the worst imaginable choices. A ubiquitous aim for these protocols (but not always the only aim) has been to save the most lives with the resources available. Yet, there have been no direct data, to my knowledge, to prove our protocols could achieve this central aim.

Wunsch et al provide several reasons to question the clinical efficacy and ethics of crisis triage based purely on seeking to save the most lives. They compare 2 sets of triage criteria, both highly influential as models for numerous states. Each starts with the Sequential Organ Failure Assessment (SOFA) score and then adds a set of diagnostic and other clinical criteria to determine a patient’s likelihood of in-hospital mortality. The first set of criteria, the New York State Task Force on Life and the Law protocol developed in 2015, aims to save the most lives, deprioritizing patients deemed to have a high likelihood of immediate mortality. The second set includes 2 criteria from a 4-component allocation framework developed in 2020 using principles of saving lives and saving life-years (referred to as save lives/life-years criteria) aims to balance saving the most lives and life-years, deprioritizing those with a high likelihood of either immediate or near-term (1-year) mortality.

Using administrative and clinical data from 208 US hospitals, the investigators retrospectively applied these 2 triage protocols to 40,430 patients admitted between 2014 and 2015 to intensive care units and placed on ventilators. They examined the protocols’ utility for triage (What proportion of patients under each protocol were determined to be lowest priority to receive a ventilator, and how many ventilator hours would have been freed up if these patients were to have been denied access to mechanical ventilation?), consistency (Do the protocols rate the same patients as lowest priority?), and accuracy (How many of the patients with lowest priority according to each protocol actually died prior to hospital discharge?).

Their findings are disturbing, but should be interpreted with caution. In short, the 2 protocols might be of limited utility in a catastrophic disaster with a severe shortage of ventilators, each
prioritized many patients differently and, if implemented as studied, both might exacerbate underlying racial and ethnic inequities in health care. The patients in this cohort were quite ill (23.5% died prior to discharge), but the assessment based on the save lives/life-years criteria placed only 4.3% of patients in the lowest priority group, while the New York state protocol classified 8.9% as lowest priority. Had all these patients been refused use of a ventilator, it would have freed only 5% to 10% of ventilators for use by others, although that number increased if patients were retriaged after 48 and 120 hours of mechanical ventilation. Although Wunsch et al indicate that the New York State protocol aims to deprioritize only patients with “medical conditions that result in immediate or near-immediate mortality even with aggressive therapy,” they found that 38.7% of patients assigned lowest priority by this protocol survived to hospital discharge. For the saved lives/life-years criteria, that number was 56.3%. Moreover, only 1.6% of patients were in the lowest priority group using both systems, and up to 3.6% of patients fell in the lowest priority group using one protocol but the highest priority group using the other. Both systems identified “a slightly higher percentage of non-White patients as lowest priority.”

There are challenges in interpreting these data. As examples, the patients in this cohort did not have COVID-19, and the investigators used discharge data that might not be available if one were performing triage in real time. In addition, the investigators did not use the complete 4-component iteration of the protocol based on saved lives/life-years because they were not able to operationalize the second 2 criteria, which are equity focused and give heightened priority to health care workers and other essential workers and prioritize younger over older patients. Overall, however, the findings are robust enough to conclude that triage protocols based on the SOFA score and a limited list of comorbidities—like virtually all protocols in the US today—might not be consistent, accurate, or useful for crisis triage when used alone.

What actions should these findings prompt, coming as they do during a pandemic when it remains possible that more health systems will be overwhelmed by COVID-19 surges and might need to implement crisis triage?

First, Wunsch et al raise important concerns about using the SOFA score as the basis for crisis triage. A more accurate triage score, tailored to COVID-19, would be helpful and should be possible. But even before the current pandemic, overreliance on SOFA to predict mortality from viral pneumonia was recognized as problematic—the challenge was finding a realistic alternative. In addition, despite being relatively inaccurate, using a SOFA-based triage protocol still might save more lives than would be saved by taking a first-come, first-served approach.

Second, these findings call attention to the importance—indeed necessity—of considering values in addition to efficiency in triage. For example, underserved racial/ethnic groups are already experiencing disproportionate mortality from COVID-19, and this study supports concerns that SOFA-based crisis triage protocols that do not address equity considerations could exacerbate those trends. This raises a question that cannot be answered using clinical data: how should the value of equity be addressed in crisis triage protocols?

More pointedly, this study shows why any purely clinical scoring system will put most patients in the highest priority groups, essentially tied—because most people placed on ventilators will, in fact, survive. As a result, even if it were ethically justifiable to focus only on clinical efficiency and avoid consideration of any other values, this will not be possible if more than just a few patients need to be triaged away from usual care. Other values must come into play, at least to break ties. Thus, debates about preferentially allocating ventilators to people from communities hard hit by the virus or to health care workers or to frontline workers in other essential industries all deserve careful consideration. Of course, prioritizing these groups in triage would reflect ethical principles such as equity and reciprocity and be based on community values not clinical facts. Deliberative community engagement will therefore be required to determine how to weigh these principles in triage protocols. For states and systems that have not done so already, it is past time to get that conversation started.
REFERENCES


