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fixed-wing aircraft to our facility where her cannulation was revised and she stabilized. Was this the right decision? I do not know. I do know that my colleagues to the north have the concepts right and that they are applying them in an ethically sound manner, whatever the model says.

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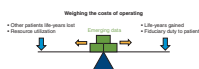
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The question arises, what is the role of utilitarianism in cardiac surgery—a field rife with acuity and where “elective” perhaps could be redefined as “electively acute”? As Makhdoum and colleagues¹ point out, modest delays are permissible, but there is always a price to pay. Head and colleagues³ reported a 1.1% death rate per 1000 patient-weeks while awaiting surgery. However, this cost becomes affordable to society when the alternative is almost certainly 100% fatal in a patient with Coronavirus Disease 2019 (COVID 19) and acute respiratory disease syndrome requiring intensive care unit (ICU) care.

Medical decision making is rooted in individualistic clinician beliefs and often does not fully consider resource allocation at a societal level. This, of course, makes sense. Surgeons primarily have a fiduciary responsibility to their patients, even after the first clinic visit. How could we defer surgical revascularization for patient X seen in the office with his family for the benefit of an unidentified statistic (ie, a patient in the emergency department with worsening COVID acute respiratory disease syndrome)? The fact is that those “statistics” are *known* to their friends and families and so operating on, and subsequently using an ICU bed for, a known patient could indirectly worsen outcomes for another. This puts surgeons in unfamiliar territory—a shift from a prioritization of their patient to that of society.

The arithmetic guiding these decisions, stemming from arguments over cost-effectiveness and quality-adjusted life year maximization, can be debated infinitum. Ultimately, to maximize gain and minimize harm, we need agreed-upon decision-making algorithms and risk stratification tools to weigh predicted resource consumption against anticipated gain. The Society of Thoracic Surgeons online calculators have made inroads into this challenge with predicted ventilator durations, continuous venovenous hemofiltration probability, and so forth, but the job is far from over. In our article,⁴ we sought to establish qualitative thresholds by which surgeons could more objectively decide whether to operate on a given patient during a given phase of the pandemic. However, this type of heuristic is still limited by its unit conversion. What proportion of “resource consumption” to “life years gained” is ethically acceptable? Common units are needed to make this kind of comparison. Bolstered with more objective data that will likely emerge from this pandemic, perhaps more sophisticated heuristics can be developed balancing potential “life years gained” against potential “life years lost.”

Another surge will come. It may not be a “second wave” of COVID-19 that overwhelms ICU capacity, but our healthcare system will inevitably be tested again in the future. To prepare, we must harness the data emerging from this pandemic to advance our surgical triaging skills and develop more robust tools to more objectively work through issues of ethical proportionalities. Clinical wards once uncomfortable caring for patients requiring



**REPLY: A PROBLEM OF
 “ETHIC”
 PROPORTIONS
 Reply to the Editor:**



As healthcare providers, we must care for those who are sick. Our industry is not afforded the luxury of capping production or stopping the assembly line when conditions become overwhelming. Naturally, this means compromises must be made, operations delayed, staff reassigned, and, potentially, prioritization of care when hospitals begin to exceed capacity. Resources are finite, and in times of pandemic, procedural justice guided by utilitarianism, collectivism, and common sense must prevail.

Makhdoum and colleagues¹ present a thoughtful letter on the philosophical perspectives surrounding critical care and cardiac surgical case prioritization. The crux of the argument is “there are no simple solutions” to, in the words of Dr Rajagopal, this “wicked” and highly complex problem.²

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nonrebreather masks managed dozens of ventilated patients, providers who had never set foot in an ICU mastered ventilator optimization to reduce peak and plateau pressures, and mammography technicians learned to use chest radiograph machines. These are only a handful of examples of the rapid evolution that took place within our institution. As a specialty that prides itself on innovating outside its comfort zone, maybe now is the time we as cardiothoracic surgeons learn to play a bigger role in incorporating the economics and ethics of whom we operate on when the system is strained and take more effective ownership over the challenges to come.

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**REPLY FROM THE
 AUTHOR: HAMLET,
 THE CARDIAC
 SURGEON**
Reply to the Editor:



“...for there is nothing either good or bad, but thinking makes it so.”

—Hamlet, Act 2, Scene 2

Thank you to Dr Fremes and his colleagues for their insightful remarks regarding what they termed the “wicked” problem of how to allocate cardiac surgical services in the context of the Coronavirus Disease 2019 (COVID-19) pandemic. In the previous Commentary¹ on the Columbia University-Presbyterian Medical Center article,² I had merely posed questions. Dr Fremes’ group has attempted to answer them. The ethical principles that they outlined³ notably incorporate procedural justice, essentially an agreed-upon data-driven “due process” methodology. Referring to their specific example of predicted adverse effects of delaying coronary artery bypass grafting (CABG), a patient of mine whose “elective” CABG was delayed because of COVID-19–related policies sustained an acute myocardial infarction, necessitating an urgent operation. The commonly adopted approaches to resource allocation clearly are not without drawbacks, and thus their proposal merits further analysis.

In response, some considerations may be appropriate. Hamlet’s statement, in my view, is not an endorsement of moral relativism. Rather, it suggests that determinations of “goodness” or “badness” emerge only *after* thinking about at least 2 other factors. First, whether a material process or state (eg, a cardiac surgical procedure) is good or bad depends on context. For example, in an absolute sense, performing “elective” CABG is “good” for patients who need it. However, particularly with realistic resource limitations even in the best centers, prioritizing this and thereby delaying a heart transplant with a narrow time window would be “bad”; consequently, and as expected, centers would not do this. This appears in line with Fremes and colleagues’ proposal. As someone within the fields of end-stage heart/lung disease as well as general adult cardiac surgery, these are prioritizations with which I am unfortunately familiar and indeed are wicked problems.

The second factor is more challenging. This is whether goodness or badness of values exists in an absolute sense, which I believe, or whether social consensus is necessary or sufficient to validate or invalidate them, which I do not believe. This is often viewed as the distinction between morality and ethics. Much that some of us view as immoral may be viewed as ethical by the larger population, or vice versa. Moreover, what is unethical today was ethical in the past or what is ethical today was unethical in the past. This is concerning. Practically, consensus is required to implement policies, but does this mean that consensus should be a fundamental value? Should individual patients suffer as a consequence of consensus or surgeons suffer in response to violating one? Although procedural justice provides appealing hard analytic tools, whether or not they are adopted, and what criteria are used rest on the presence or absence of consensus.

Yet, some action needs to be taken. Differences in views must be discussed in good faith. Fremes and colleagues