The authors reported no conflicts of interest.

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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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References

1. Makhdoum A, Tam DY, Fremes SE. Wicked problems and proportionality: is the lesser of two evils the best we can do? *J Thorac Cardiovasc Surg*. 2021;161:e231-2.
2. Rajagopal K. Commentary: Implications of COVID-19 for cardiac surgery: priorities and decisions. *J Thorac Cardiovasc Surg*. 2020;160:951-2.
3. Head SJ, da Costa BR, Beumer B, Stefanini SG, Alfonso F, Clemmensen PM, et al. Adverse events while awaiting myocardial revascularization: a systematic review and meta-analysis. *Eur J Cardiothorac Surg*. 2017;52:206-17.
4. George I, Salna M, Kobsa S, Deroo S, Kriegel J, Blitzer D, et al. The rapid transformation of cardiac surgery practice in the COVID-19 pandemic: insights and clinical strategies from a center at the epicenter. *J Thorac Cardiovasc Surg*. July 2, 2020 [Epub ahead of print].

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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 Commentary[1] 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 outlined[3] 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

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have made an important attempt toward fair cardiac surgery resource allocation.

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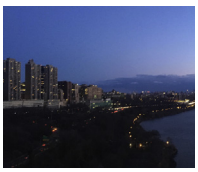
References

1. Rajagopal K. Implications of COVID-19 for cardiac surgery: priorities and decisions. *J Thorac Cardiovasc Surg*. 2020;160:951-2.
2. George I, Salna M, Kobsa S, Deroo S, Kriegel J, Blitzer D, et al. The rapid transformation of cardiac surgery practice in the COVID-19 pandemic: insights and clinical strategies from a center at the epicenter. *J Thorac Cardiovasc Surg*. 2020;160:937-47.
3. Makhdoum A, Tam DY, Fremes SE. Wicked problems and proportionality: is the lesser of two evils the best we can do? *J Thorac Cardiovasc Surg*. 2021;161:e231-2.

https://doi.org/10.1016/j.jtcvs.2020.06.123



LOW RATE OF HEALTH CARE-ASSOCIATED TRANSMISSION OF CORONAVIRUS DISEASE 2019 (COVID-19) IN THE EPICENTER

To the Editor:

As New York City emerged as a hotspot in the coronavirus disease 2019 (COVID-19) pandemic, elective procedures were stopped statewide,[1] and hospitals prepared to expand intensive care unit (ICU) capacity.[2] Before the pandemic, NewYork-Presbyterian/Columbia University Irving Medical Center (NYP/CUIMC), a quaternary referral center in northern Manhattan, had approximately 117 ICU beds. Additional ICU capacity was created using nontraditional space, including 13 operating rooms repurposed as an 80-bed ICU. At the height of the pandemic in mid-April, a maximum of 255 patients was present in the ICU, of whom 236 were patients with COVID-19.

The approach to bed allocation at NYP/CUIMC began with identifying specific ICUs and floors as "COVID-19 units" in early March 2020. When possible, rooms in COVID-19 units were retrofitted for negative pressure to minimize exposure of health care workers. Use of these rooms was prioritized for patients undergoing aerosol-generating procedures, such as endotracheal intubation or use of noninvasive ventilation.

Policies were also implemented and updated in an iterative fashion. These included contact and droplet isolation precautions for patients with COVID-19 and patients under investigation; use of N95 respirators prioritized for use during aerosol-generating procedures first for patients with COVID-19 and later for allowable all patients; universal health care worker "masks on" policy starting March 25, 2020; and routine preadmission testing of all patients starting April 4, 2020.

As the number of admitted patients with COVID-19 continued to grow, the bed-allocation strategy shifted from designation of "COVID-19 units" to designation of "COVID-19–free units," which would not admit patients positive for COVID-19. The main cardiothoracic ICU (Unit 1) and the cardiac surgical stepdown and floor unit (Unit 2) were designated "COVID-19–free," owing to their substantial populations of immunosuppressed patients. The only other COVID-19–free unit was an 18-bed oncology unit. Nursing staff was dedicated to these units, although respiratory therapists could be reassigned between COVID-19 units and COVID-19–free units on a daily basis, and physician attendings in the ICU were assigned to Unit 1 for a week at a time. Staff adhered to hospital infection-control policy (eg, "masks on" at all times starting March 25, 2020) whether working in a COVID-19 unit or a COVID-19–free unit. Units 1 and 2 were on the fifth floor. COVID-19 units were located on floors 3 through 9, including several units also on the fifth floor. COVID-19 units were contiguous to Unit 1 and Unit 2, including 2 units directly connected by sets of doors to Unit 1.

Even in the epicenter of the pandemic, NYP/CUIMC continued to provide surgical care on an emergency basis. All surgical patients negative for COVID-19 requiring ICU care were admitted to Unit 1. In anticipation of the reanimation of the cardiac surgical program, the Cardiothoracic Surgery Quality Assurance Committee reviewed all patients admitted from March 1 to April 27, 2020. The intent was to characterize health care–associated acquisition of severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) in these COVID-19–free units in an effort to determine the safety of performing surgery on a potentially vulnerable population in a hospital with a high census of patients with COVID-19.

For patients admitted to Unit 1 and Unit 2 during the study period, the electronic medical record was reviewed for all SARS-CoV-2 viral polymerase chain reaction