

## Separate and unequal: Pandemic-related disparities in operating room access

### To the Editor:

We read with great interest the article “Do Surgical Emergencies Stay at Home? Observations from the First United States COVID Epicenter.” Dr. Dong and colleagues examined the dramatic decrease in emergency general surgery (EGS) admissions from March to May of 2020 in 11 New York hospitals. While an increase in inpatient mortality among COVID-negative EGS patients and an increase in deaths at home were attributed to delays in presentation, the authors did not comment on the time between presentation and the receipt of surgery. Timely access to care is the cornerstone of surgical treatment of many diseases. Delaying an operation in nearly all acute settings makes it more difficult to perform, riskier, and more expensive as the disease burden accumulates.<sup>1</sup> While emergent access to the operating rooms (ORs) may have been easier when elective cases were canceled, logistical constraints and staffing issues may have led to delays.

Now, as elective operations resume, OR access has become increasingly challenging because of the large backlog of cases. Before the pandemic, many hospitals were running their ORs at near capacity, leaving little room to accommodate additional surgeries and forcing scheduling delays as long as 20 months. As a result, patients are facing mounting challenges to the receipt of timely surgical treatment as outpatients and as inpatients.

Fifteen million Americans, disproportionately minorities and socioeconomically disadvantaged groups, have lost their health insurance since March of 2020, undermining access to elective care.<sup>2</sup> While the authors focused on patients presenting emergently, many of the conditions they studied may have previously been suitable for scheduled operations (e.g., groin hernias, ventral hernias, cholelithiasis, etc.). These patients may have developed disease progression when elective

cases were canceled, furthering their risks of bad outcomes.

Some EGS patients in need of “urgent,” nonemergent surgery are being triaged behind both back-logged elective cases and unplanned surgical emergencies. Consequently, these inpatients may wait days for surgery or until their condition deteriorates further.

In an attempt to obviate these risks and alleviate some of the surgical backlog, ORs are often running late into the night. This nocturnal scheduling has shifted the burden of “after-hours” surgical care onto exhausted surgeons extending an already long day or to surgeons who have typically provided nighttime coverage for trauma and other emergencies, now at jeopardy of not being available for the true surgical emergency. Operations performed at night are also known to have an increased risk of adverse intraoperative events and postoperative pulmonary complications.<sup>3</sup> This risk must then be balanced against the need for surgical throughput, long hospital lengths of stay, and the risks of further delaying surgery.

The patients most commonly affected by being repeatedly triaged last are more often of a minority race (87.8% of the EGS patients in this article), have public or no insurance (82.1%), and/or require interpreter services (not described). These patients are also less likely to have other options for care or access to follow-up care after hospital discharge.<sup>4</sup> The net result of these practices is a two-tiered system in which well-insured patients receive scheduled elective operations during the day and vulnerable patients presenting through the emergency department receive a lower standard of care with no designated time for surgery. While it is not clear if any of the New York hospitals faced similar challenges, this experience has been shared by many of our colleagues on the West Coast and throughout the Midwest.

Allocating resources across competing surgical needs is especially challenging, particularly as a fee for service payment model is being replaced by a capitated care model. The expansion of OR hours into the night must balance the need to work through the backlog of elective cases, regain lost revenue for

COVID delayed elective surgery, and meet emergency surgical demands. A hierarchy of surgical urgency should be agreed upon within each hospital system to impartially decide when to delay elective surgeries to allow for timely urgent inpatient cases and provide prompt OR availability for emergencies. Consistent transparent decision making, with adherence to agreed upon plans, is paramount to avoid the perception of bias. Thankfully, bias-aware algorithms are being developed to assist with automated prioritization of surgical cases in real time. One such system exists at Johns Hopkins Medical Center; it takes into account surgical risk factors, capacity requirements, and COVID-19 risk factors. Similarly, the American College of Surgeons provided a 21-point scoring system to assist hospitals with resource allocation and surgical prioritization.<sup>5</sup> Nonetheless, it will be important to maintain awareness of potential biases that may exist within these algorithms that may intensify disparities.

Hospital systems can enhance equity by including measurements of patients’ social vulnerability into their prioritization algorithms using data already captured within the electronic medical record. The Social Vulnerability Index (SVI) is a composite scale created by the Centers for Disease Control for disaster planning and mitigation.<sup>4</sup> It includes four categories that contribute to population-level social vulnerability: (1) socioeconomic status, (2) household composition or disability, (3) minority status or language, and (4) housing or transportation. These data are readily available and can be downloaded from the Centers for Disease Control website in multiple formats. Electronic medical records could calculate SVI from the patient’s address. Analysis of SVI data across each category of surgical urgency could ensure that equitable access to the OR is being provided by institutions’ prioritization schemes.

It is of paramount importance that we do not view the uptick in EGS mortality from March to May 2020 as an isolated effect of public health measures that have since passed, but instead view it as a harbinger of ongoing challenges in health care delivery. Changes are needed

to protect both vulnerable patients and surgeons from undue physical and emotional harm, including the moral injury that accompanies the struggle to balance conflicting values. Hospital systems must ensure that access to the OR is provided in a fair and equitable way that does not exacerbate existing disparities in health care delivery for patients and surgical services alike.

#### DISCLOSURE

The authors declare no conflicts of interest.  
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## Response to “Separate and unequal: Pandemic-related disparities in operating room access”

#### To the Editor:

We would like to thank Drs. Russo and Jurkovich for their thoughtful response to our recently published article highlighting the early effects of the COVID-19 pandemic on the emergency general surgery (EGS) population of the New York City Health + Hospitals network, the nation’s largest municipal hospital system. Our goal was to describe the impact of statewide quarantine measures on EGS admissions and mortality during the first wave of the pandemic. We observed both a significant decrease in admissions and a significant increase in mortality for EGS patients, both coinciding with the peak of COVID infection rates in our cohort. Their letter raises several excellent points that we would like to discuss.

In our original discussion, we postulated that delays in initial presentation may have resulted in advanced disease and higher severity of illness. Our colleagues raise the question of whether prolonged time to procedure may explain our observed increase in mortality. However, because of the constraints of our available data, we were not able to analyze any factors after admission that may have produced further delays in care. We agree that timely surgical treatment can often be limited by staffing issues, particularly in the context of overnight and weekend shifts. As the burden of these “add-on” cases continues to fall on after-hour providers, optimal triage and scheduling of urgent EGS cases remain a challenge.

More importantly, our colleagues suggest that the negative impact of the pandemic is merely a symptom of larger, more longstanding issues in our existing health care system. This is a sentiment that we agree with wholeheartedly. The mission of New York City Health + Hospitals is “to deliver high quality health services with compassion, dignity, and respect to all, regardless of income,

gender identity, or immigration status.”<sup>1</sup> The overwhelming majority of our EGS patients falls under the category of high social vulnerability and face multiple obstacles to equitable health care delivery and access. Although the cancellation of elective surgery may have clinically upstaged a subset of patients into the EGS category, in our experience, many patients with surgical disease have never been evaluated by a surgeon before coming to the emergency department. While not specific to the EGS population, data from our neighboring hospitals before the pandemic report not only a high percentage of patients diagnosed with cancer in the ED but also worse surgical outcomes associated with inpatient as compared with outpatient resection.<sup>2</sup> We suspect that these patients may not have thought to seek out care in a nonurgent setting or were perhaps thwarted by any number of barriers to primary care. While hospital systems have a duty to provide equitable delivery of surgical therapies to all patients, further work must be done to expand access to the system overall.

#### DISCLOSURE

The authors declare no conflicts of interest.

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