Since January 2020 Elsevier has created a COVID-19 resource centre with free information in English and Mandarin on the novel coronavirus COVID-19. The COVID-19 resource centre is hosted on Elsevier Connect, the company's public news and information website.

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Correspondence

Pandemic surgical classification is useful during nurse staffing shortages

To the Editor,

Spurred by the recently dominant Delta variant and the now highly transmissible Omicron variant of the SARS-CoV-2 coronavirus (COVID), hospital systems around the United States are experiencing nursing shortages in unprecedented fashion. As new variants of the coronavirus continue to emerge, this shortage is likely to present a burden to the healthcare system for some time to come. It is estimated an additional one million registered nurses (RNs) will be needed across United States healthcare institutions by 2030 [1]. These shortages are due to both increased demand of skilled workers as the population of the United States ages, as well as an inability to increase capacity at education centers to meet the above needs [2]. While the overall shortage is staggering and not unique to Nebraska, Nebraska alone is currently over four thousand nurses short [3]. Nursing shortages have led to increased nurse to patient ratios on patient care units, which raises the concern of patient safety. The stressors of an unfavorable staff to patient ratio, on an already over-burdened nursing staff model, has led to health care institutions having to modify their approach to daily operations. While the state of Nebraska, and the United States as a whole, has been dealing with another surge of coronavirus cases, our local hospital census has been increasing as a result (Fig. 1). In addition to nursing staff being asked to increase their patient load, nursing and patient educators have begun performing bedside nursing to help cover the increased burden due to an overwhelming hospital census.

In this correspondence, we discuss selective surgical reduction by surgical classification and cap admission by day of the week to ease the burden on an existing staff shortage and near maximum hospital census. In an attempt to scale back the hospital census, limitations were set on how many surgical admissions could occur each day. Surgical cases that resulted in hospital admission postoperatively were specifically targeted for reduction due to the concerns discussed above. Surgical cases that did not require hospital admission were not considered in this planning model. The number of surgical cases limited was fluid and directly linked to the rise and fall of the daily hospital census. Daily multidisciplinary scheduling committees were held to ensure the optimal number of beds available for surgical patients while prioritizing patient needs based on established criteria. In general, surgical cases requiring postoperative hospital admission were limited to 10 cases on Monday and Friday, 15 cases on Tuesday and Thursday, and 20 cases on Wednesday. These surgical admission caps were instituted to make sure the clinical burden from COVID could be handled, that persistent high demand for admissions from the emergency department could be cared for, and to ease the burden of the continued staffing shortages (nursing and care techs).

When a case was being scheduled, the case was first categorized by case classification (Table 1). This classification system was first developed in our institution in the early phases of the COVID pandemic and has proven useful during this time. Multiple factors were considered in the assignment of case classification in our institution in line with guidance from the American College of Surgeons [4]. This prioritization process was overseen by a multidisciplinary team of surgeons, anesthesiologists, nurses and administrative staff. Consideration was given to the institution's logistical capability to meet the needs of their patients. Logistical capability was determined by administrative personnel with an understanding of hospital and community limitations, taking into consideration facility resources (beds, staff, equipment, supplies, etc.) and provider and community safety and well-being. Furthermore, the medical need for a given procedure was established by a surgeon with direct expertise in the relevant surgical specialty who would then determine what medical risks would be incurred by case delay. In addition, assessments using knowledge of the evolving national, local and regional conditions were considered in assigning case classification, recognizing that regional variation may lead to significant differences in regional decision-making. In summary, our institution approached surgical case classification not based solely on COVID-associated risks, but rather on an assimilation of all available medical and logistical information. In addition to case classification based on the factors above, consideration was also given to whether the surgical procedure required postoperative hospital admission. Surgical cases not requiring postoperative hospital stay (that didn't meet outpatient criteria due to ASA physical status) were allowed on the schedule. In our institution, the post-operative anesthesia care unit (PACU) transitions to an overnight unit which is able to care for patients Monday through Thursday night. During this time of surgical reduction, up to six cases per day were allowed that required a 23-h observation admission postoperatively, since this was the number of patients that the PACU could hold overnight. If a full admission was required, the surgical date schedule was checked to see the number of admissions that day had on it. If the number of surgical admissions was under the limit, the case was approved to be placed on the schedule. If a more urgent case (Class C) needed to be placed on the schedule, then a lower classification case (Class D) would be moved, always keeping at the daily max number of surgical admissions.

While the above practices have allowed our institution to continue to provide high-level care to our patients, the burden of a high hospital census and staffing shortage continues to persist. Modification of our approach to surgical cases requiring hospital admission postoperatively, carried out in conjunction with other adjustments to daily operations in our institution, have been successful in traversing these difficult times. Further adjustments to our workflow and daily operations may be required as we continue to navigate through this pandemic.

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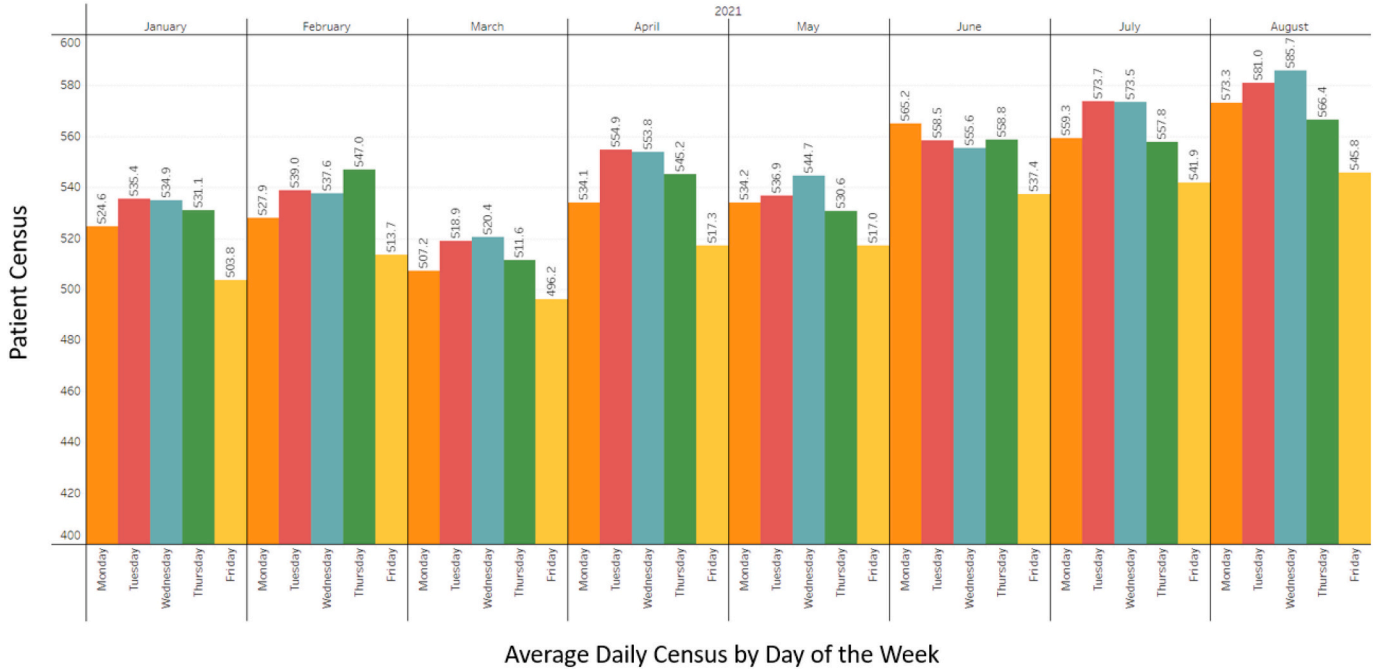

Fig. 1. Daily census per month and by day of the week.

Table 1
Surgical classification used during case scheduling limitations.

Surgical Classification	Surgical -Scheduling Action
Class A	Life/limb at risk: Emergent surgery now
Class B	Time sensitive outcome necessitating procedure within 24 h: Case added to schedule
Class C	Time sensitive outcome necessitating procedure within 4 weeks: Case placed on schedule when needed per patient clinical characteristics.
Class D	Can wait 4–8 weeks or longer without substantial change in outcome: Find date when surgical admits are available
Class E	Can wait greater than 8 weeks without substantial change in outcome: Postpone and reassess depending on hospital census

Declaration of Competing Interest

The authors have no Conflict of Interest with any medical device or company.

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