Commentary Regarding: COVID-19 Significantly Impacted Hospital Length of Stay and Discharge Patterns for Adult Spinal Deformity Patients, by Wang, *et al.*

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Although COVID-19 is a very controversial virus for a full spectrum of reasons, there is no question that the surgical triage that has emerged with the COVID-19 pandemic has had a substantial impact on most surgical practices.¹ In response to this crisis, surgical triage prioritization consistent with time-honored principles of triage were developed rapidly by the medical community, and sacrifices have been made by all participants in surgical care including patients, hospitals, hospital staff, and physicians to address the need for hospital preparedness in the early phases of the pandemic and the additional perceived staffing shortage in the later stages.² Mr. Wang, corresponding author Dr. Khaled Kebaish, and associates sought to identify the impact of COVID-19 triage on a narrow spectrum of surgery for adult spinal deformity patients, although they offer a robust surgical count experience before and after declaration of the COVID-19 crisis pandemic that allows clarity of the impact of COVID-19 on their perioperative management of these patients. The authors may have identified that with the implementation of advanced patient selection and accelerated rehabilitation protocols that patients treated surgically after the pandemic declaration had shorter lengths of stay (LOS) and more patients were discharge home without increasing complications rates and readmission rates.

There are many possible explanations for these positive outcomes, but this is not described in the methods section as

this is an observational case series, and this is very acceptable under the circumstances. One explanation is case selection bias for easier cases, but this was not the observation as the authors identified statistically relevant longer fusion constructs and more estimated blood loss with the cases performed during the pandemic *versus* pre-pandemic. There was a higher percentage of three-column osteotomies, perhaps the pinnacle of complexity for the thoracolumbar spine, in the intra-pandemic series, but this was not statistically relevant. Another explanation is a difference in the American Society of Anesthesiology (ASA) score leading into the surgical cases between the two groups, but this was not observed, although this rating system has broad yet validated categorical considerations. There is a risk that there could ultimately be a meaningful difference in ASA categories with a higher percentage of ASA 2 in the during-COVID period and a higher percentage of ASA 3 patients in the pre-COVID period. There may be a type II error describing the relative ASA status of the two groups despite the reasonably high patient count. The pandemic surgical cases were younger on average, but the differences between the two groups are the same after controlling for all the variables.

Having a similar anecdotal experience as noted in the study, my best explanation for the difference before and after declaration of the pandemic with the ensuing pandemic triage scheme is a combination of system motivation and fear of the perception of the risk of patients acquiring COVID-19 in the hospital or the extended care units (ECFs). The system suspended rules for discharge from the hospitals to the ECFs to allow transfer before 3-day inpatient stay durations. To get surgeries done during the pandemic, surgeons and patients have had to commit to shorter lengths of stay with discharge to home. Hospitals had to offer more expedient social services for patients. It is possible that patients had more resources at home with the higher unemployment rate during the pandemic. The pandemic has seemingly forced better presurgical discharge disposition planning and more assertive postoperative social work in

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my experience. Fortunately, the authors did not identify a change in the patient centered outcomes postoperatively between the two groups. In short, better preoperative planning for postoperative discharge and managing patient expectations appear to be the core of expedient lengths of stay with home discharges and maintenance of surgical outcome quality. Further explanation of the mechanism of improved rates of discharge to home and short LOS would be very helpful in future studies.

The motivations of patients to persevere with complex spine surgery despite the perception of increased risk of acquiring COVID-19 in the hospital speaks to the degree to which patients perceive a need to have this type of surgery. The authors are commended for offering such a large series of complex spinal cases in a short period of time to help surgeons address triage expectations. Unfortunately, the COVID-19 wave of 2021 is offering investigators another opportunity to address greater numbers

of patients who are subjugated to the pandemic surgical triage.

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