Letter: Emergency Response Plan During the COVID-19 Pandemic: The University of Alabama at Birmingham Experience

To the Editor:

Due to the rapid spread of severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) in the United States and its anticipated ramifications, an emergency plan was deployed by the University of Alabama at Birmingham (UAB) Department of Neurosurgery on March 14, 2020. The design was centered on restructuring resident coverage, ambulatory encounters, continuing resident education, and implementation of transmission-mitigation strategies in accordance with the Centers for Disease Control and Prevention's (CDC's) guidelines for social distancing.[1]

RESTRUCTURING MEASURES

Service Coverage

Under the initial contingency plan, termed "Plan Alpha," a cohort of 24 residents and fellows was pooled together and strategically divided into 3 teams deployed into various areas of need.

After approximately 7 d, "Plan Bravo" was initiated, which further divided residents into 4 teams. The aims of Plan Bravo were to limit further the number of neurosurgery residents covering inpatient duties in order to reduce cumulative exposure risk, shorten length of clinical duty, and maintain a working supply of "stand-by" residents should someone become infected with SARS-CoV-2.

Exposures and Quarantines

A total of 2 adult faculty members, 1 chief resident, 1 senior resident, and 4 junior residents have had high risk exposures to patients who were not known to harbor SARS-CoV-2 at the time of exposure. Then, 1 asymptomatic faculty member and 1 symptomatic resident were quarantined off service, but eventually tested negative.

Limited Odds Ratio model

While some faculty had pre-emptively reduced their elective practices in the preceding weeks, the department issued an official requirement for all nonessential cases to be canceled beginning March 17, 2020, with nonemergent case scheduling to be determined at the discretion of the chairman or medical director.

Between March 17 and April 9, we performed 45 neurosurgical cases. In comparison, the total number of cases performed over the same time period in 2019 was 188.

Neurocritical Care Unit Restructuring

Early in the pandemic, 28 of the 36 neurointensive care unit (NICU) beds were converted into units for critically-ill patients positive with SARS-CoV-2 and "person under investigation" (PUI) rooms. The NICU was eventually expanded to a total of 56 beds to accommodate 28 SARS-CoV-2 infected and PUI patients and 28 nonCOVID neurosurgery and neurology patients.

Teleconsults

To limit exposures, on March 24, the department initiated a teleconsultation program for trauma patients with nonurgent or nonoperative pathology. Under this new model, determination of the appropriateness for teleconsultation occurred at the discretion of the chief resident and/or attending neurosurgeon. Any patient for whom close neurological monitoring was required did not qualify for teleconsultation.

Scheduled Conferences and Resident Education

Under Plan Alpha, in-person conference attendance was limited to 10 individuals with the requirement that each attending's service communicate relevant patient discussions to the neurocritical care team and advanced practice providers (APPs) who no longer attended the conference in person; however, given stricter social distancing recommendations, the number of in-person attendees was further reduced to fewer than 5 individuals under Plan Bravo. At this time, Zoom video conferencing software was implemented.[2] Password protection of the conference was utilized to prevent "Zoombombing"—uninvited guest participation.

All regular departmental didactic lectures and conferences also adopted the online conference model.[2]

During the era of reduced clinical and operative exposure, the department encouraged the use of a wide array of educational resources offered by the Congress of Neurological Surgeons (CNS).[3]

Ambulatory Telemedicine

Ambulatory clinics transitioned largely to telehealth visits on March 16. Between March 16 and April 9, 110 in-person visits and 220 telehealth visits (76 telemedicine and 144 phone visits) were completed, reflecting roughly 17% to 23% of our average volume.

Residents and faculty were given access to HelpLightning™ for electronic consultation/evaluation use.[4] Developed by UAB's Barton Guthrie, MD, the application is a mixed-reality platform that has been used in healthcare and a multitude of other disciplines for educational and supportive purposes. HelpLightning™ is a mobile application that helps facilitate a Health Insurance Portability and Accountability Act (HIPAA)-compliant electronic transmission of medical history, imaging

and a virtual neurological examination. This application requires minimal patient education and no software installation onto a personal device.[4] We utilize HelpLightning™ primarily for outside facility consultations and transfer requests that have a low probability of serious neurological injury or need for neurosurgical intervention, and, when needed, for inpatient telehealth as well. The institution also provided the application AW Touchpoint™ for use in outpatient-only telehealth, which facilitated billing and scheduling. AW Touchpoint™ appointments required preappointment education and application installation on the patient's cell phone, which was accomplished by UAB's Central Access Center. Most appointments were accomplished by standard telephone calls, as providers became accustomed to the new telehealth platforms and as many patients in Alabama still do not have internet access (over 20% of households in 2017).[5] By April 8, 7% of the Department's visits were being conducted in person, 59% by telephone, and 34% by video-telehealth, ranking the Department of Neurosurgery as the fourth highest department at UAB in terms of percentage visits accomplished by video telehealth.

CONCLUSION/INSIGHTS

The UAB Department of Neurosurgery has effectively restructured its program during the COVID-19 pandemic. Under this framework, no resident or faculty has tested positive for SARS-CoV-2.

Disclosures

The authors have no personal, financial, or institutional interest in any of the drugs, materials, or devices described in this article.

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10.1093/neuros/nyaa183