Impact of COVID-19 Within a Midwestern General Surgery Residency

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Coronavirus disease (COVID-19) has caused an impact on American and international society unlike anything our or any recent generation has ever seen. Some countries have been affected more significantly than others, though the response and fallout have been international.[1] Besides large-scale restructuring from "stay at home" directives and other measures, the Department of Surgery at the University of Kansas Medical Center in Kansas City implemented several measures and procedures to limit staff exposure, continue surgical care throughout the hospital, and create opportunities for learning for its surgical residents. Similar to many midwestern communities, our hospital did not see the early surge experienced by other systems. Simultaneously, the volume of surgical procedures was decreased to allow for the conservation of personal protective equipment and allow for possible re-deployment of personnel and space in hospitals.

The immediate and long-term effects of this pandemic on surgical resident education remain unclear. The department, early on, worked to continue Grand Rounds, utilizing video chat technology to maintain senior resident presentations throughout this spring season.[2] Unfortunately, the department had to cancel a visiting professor resulting in a week-long hiatus after the immediate shelter in place order. Nonetheless, protected time of resident conferences has been well adhered-to, with ongoing Surgical Council on Resident Education (SCORE) curriculum presentations by surgical faculty, and Morbidity and Mortality conferences during their regular times. While the ability to participate actively in utilizing these new electronic HIPAA compliant modalities was limited at first, it is increasing as residents get accustomed to the new norm. Immediate feedback sometimes is limited as the host often needs to mute everyone's microphones due to background noise and not all computers have video due to the utilization of hospital desktops that typically lack video equipment. Future conferences may bring a new appreciation for meeting in-person once restrictions are lifted. Self-directed learning from question banks, textbooks, and literature review continues to be the crux of surgical resident education, with possibly more time available as surgical case load and clinical schedules lighten.[3] Some residents have been recruited to continue medical student lectures and to lead clinically case-based discussions.

The operative experience of our residents, as with other programs, has been impacted. Our surgical oncology and colorectal surgery services have moved two to three residents to home call from a five to six-person team. Similarly, decreases in resident complement have occurred in the vascular surgery and acute care surgery services as volumes have decreased. Unlike some other institutions, a line service was not instated, since there was not the need due to the relatively limited number of COVID-19 patients. Conference calls in the morning kept the entire team up to date (even the residents who are in "reserve") as they rotated through the service on rounding days or in-house call. The team members at home continued to update the in-house residents with relevant labs or chart review by utilizing the electronic medical record. Weekly pre-operative conferences and indication conferences (reviewing the cases for the coming week) continued with the involvement of those residents at home. While those in-house continued to operate, volumes decreased by approximately half, limited mainly to oncologic operations that cannot be delayed or urgent or emergent procedures. The active clinical learning experience and technical aspects of resident education is no doubt affected. Telehealth visits, an entirely new skill being learned by staff and residents, have allowed for ongoing clinic visits, although significantly limited by lack of proper physical exam.

Two major clinical rearrangements were within the acute care surgery and trauma/critical care division. More electively focused general surgeons assumed responsibility for the acute care surgery/emergency general surgery service from the trauma/critical care surgeons. The rationale was to avoid cross-contamination of patients and teams, thereby limiting overall exposure. The other significant change in the trauma service was with regards to how residents participated in trauma activations. Typically, the senior and a mid-level resident respond to Level 1 traumas with the intern assisting in the Level 2 traumas. To limit exposure further, the mid-level resident assumed responsibility for all patient contact in traumas, with the intern or senior available as a backup. This arrangement has so far been successful.

The clinical education of our residents has continued, though at a distinctly decreased volume and pace, with the silver lining being in the care of the patients. More time can be dedicated to them on rounds, during their preoperative check-in, or post-operatively on the floor. With minimal visitation, the healthcare team collectively seemed to be more attentive to the patient and their personal needs as they go through major and minor operations with no family present. This time of decreased surgical demand seemed to allow us to be overall more attentive to the patient.

As the stay-at-home orders begin to lift and elective surgeries begin to resume, it is difficult to predict the lasting impact this time will have on surgical resident education. Precautions will no doubt be necessary for some time before we can return to "normal." While this is hard to foresee, a lasting impact hopefully will be seen in a renewed focus on staff well-being, greater attentiveness to conference time, and a continued zeal for patient care.[4]

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