COVID Corner
Association of Surgical Education, Surgery Clerkship Directors Committee Resources

Surgical Simulation in the Core Clerkship during COVID-19

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COVID-19 restrictions have created opportunities and challenges when it comes to the role of simulation in the core surgery clerkship. Simulation is an approximate imitation of an operation, process or system which can be employed when the real system cannot be engaged.[1] In the case of simulation in the surgical setting, social distancing restrictions caused educators to rethink the role of simulation in two ways: 1) safe simulated environments to teach procedural techniques, 2) simulated virtual scenarios to teach surgical clinical reasoning and communication skills.

Simulation has long been important in surgical training during the "off hours". When COVID-19 sent many medical students home from their authentic clinical environment due to concerns about lack of PPE and student safety, "off-hours" became the usual work week. Interestingly, it also turned into off hours for the faculty who teach students, as elective surgeries were paused in many locations. This provided unexpected opportunities in faculty teaching time as there has been increased attention on the interactions between the leaders and novices of the team.[2] It has also been quickly realized that teaching in the virtual environment is much more time consuming than in the authentic environment.[3]

Safe simulated environments to learn procedural techniques

Early in the pandemic, simulation centers across the country were initially closed to all learners. Those located in hospital settings were reopened slowly but with significant limitations and with most students being "home" or off-campus, their access has been minimal. As clerkships re-start, standard simulation exercises like suture sessions will need to be rethought as space limitations will impact how many trainees can be in any given room. Faculty and resident teachers may have to be more spread out between different places. More teachers may be needed, but this must be counterbalanced with the availability based on the clinical workload and people present in the hospital. Video instruction that can be viewed prior to the simulation sessions (or during the simulation sessions on one's phone/tablet/computer) should have an increasing role to offset the more limited "hands-on" teaching efforts. Clerkship Directors must engage early with their simulation center leadership to understand the rules of their specific center.

Simulated virtual scenarios to learn surgical clinical reasoning and communication skills

Aside from the development of technical skills, the surgery clerkship's other goals include exposing students to basic surgical principles and showing them how surgeons approach and prioritize different problems. Observation of the actual technical component may be less important to a student than observation of other skills that residents and practicing physicians embody (i.e. how to manage and balance clinic patients with floor issues, operating room obligations and emergency room consults).[2]

In the absence of opportunities to authentically observe surgeons and trainees in action, our college (Washington State University) designed a virtual clerkship week that was centered around simulation of skills. Although we were given the chance to employ standardized patients or screen share photos of a condition or radiographs (similar to what is used in oral boards when the examiner hands the examinee

a laminated photo or radiograph), we focused on the simulation of three Entrustable Professional Activities.[4]

- EPA 6 – Oral presentation (when presented with a complex scenario, can the student demonstrate improvement in delivery of the surgical summary statement)
- EPA 8 – Providing and receiving handoffs of care (simulation via role playing between peers in calling for a consultation)
- EPA 11 – Informed consent (role playing where the peer or faculty played the patient or family member)

These training platforms allowed trainees to be independent drivers of their education using the platform's built-in evaluation tools, self-assessment worksheets, or video recording and review of performance by a peer or an evaluator, synchronously or asynchronously. Mock pages programs that are often a part of transition to residency programs also offer students targeted learning that simulate an authentic experience. [5]

It's important that core surgery clerkship directors and faculty review the learning goals and the teaching methods to ensure that the simulated environment is level-set to their core-year medical student. While traditional simulation centers have experienced significant challenges which have affected student education, these current changes can also offer an opportunity to rethink how we use simulation and to broaden its use beyond just suturing, as outlined above. These changes could be beneficial in the long run for students and faculty alike.

References:

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