

Surgical trainees achieving the CanMEDS roles in the COVID-19 era: What have we learned and where do we go?

Gary Ko, MD

David Berger-Richardson,
MDCM, MSc

Savtaj Brar, MD, MSc

David W. Lim, MDCM, MEd, PhD

Tulin D. Cil, MD, MEd

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Correspondence to:

T.D. Cil
Princess Margaret Cancer Centre
OPG Wing
6th Floor, 5W278, 610 University Ave
Toronto ON M5G 2M9
Tulin.Cil@uhn.ca

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SUMMARY

The COVID-19 pandemic has substantially changed the practice of medicine with a shift to virtual clinical encounters, alternative management of surgical diseases owing to restrictions on elective operations, and physician redeployment to other medical services requiring coverage. These changes may limit opportunities for trainees to gain surgical expertise and have the potential to drastically affect postgraduate surgical education. However, the pandemic has also created a number of opportunities to navigate these challenges and enhance how surgical education is delivered. For example, there are now more learning opportunities available to trainees because of virtual educational sessions. We highlight some considerations in adapting postgraduate surgical training to achieve competency in the CanMEDS roles in the COVID-19 era.

The COVID-19 pandemic has led to uncertainty and unanticipated challenges for postgraduate surgical training. Substantial changes in the provision of patient care have radically altered the landscape of surgical education. Despite the difficulties posed, surgeons and trainees need to ensure that standards of postgraduate training are fulfilled. We highlight some considerations in adapting residency training in the COVID-19 era to achieve the CanMEDS roles.

SCHOLAR

The COVID-19 pandemic has strongly affected surgical education with restrictions on scheduled operations and trainee redeployment to other services, which may have limited opportunities to gain surgical experience. However, the pandemic has also provided new opportunities and expectations for trainees to advance their knowledge. Educational sessions, journal clubs and teaching rounds that previously took place in person have been converted to a virtual format, allowing learners to participate in a considerably higher volume of didactic teaching locally, nationally and internationally. Unfortunately, with the sheer volume of learning opportunities and sessions occurring after work instead of during protected conference time, there is a potential to exacerbate trainee burnout. This represents an opportunity to ensure clinical duties are balanced with the many learning opportunities available.

It is often difficult to engage learners during virtual sessions, and learners can experience “Zoom fatigue” owing to multiple virtual sessions. This represents an opportunity for faculty development on using interactive tools to engage trainees and prevent “Zoom fatigue.”

During the first wave of the pandemic, many surgical diseases were treated with pathways that deviated from standard care to minimize hospital visits, preserve personal protective equipment (PPE) and avoid nosocomial infections. For example, a patient with early-stage breast cancer that

would typically be amenable for up-front surgery may have been treated with neoadjuvant chemotherapy or endocrine therapy while operating rooms were on hold and surgeries delayed,¹ and antibiotics might have been favoured over surgery for uncomplicated appendicitis.² As a result, trainees needed to understand and become familiar with the evidence behind deviation from usual care and pandemic-specific mitigation strategies in order to appropriately counsel patients and provide a COVID-19-era treatment plan.

Furthermore, trainees need to critically review and integrate a mountain of rapidly evolving information about a novel disease. This requires a nuanced appraisal of the literature and critical thinking skills to enhance broader medical knowledge in areas outside of traditional surgical domains, such as public health and microbiology. Trainees have also contributed to our understanding COVID-19 and its impact on our health systems and diseases by participating in research and in disseminating this information.

COLLABORATOR

Many hospitals have restricted visitors from accompanying patients during the pandemic. As such, trainees have needed to adapt how they provide patient care given that patients have not had their usual support systems during this stressful time. Methods of delivering care compassionately include new protocols, such as involving family members in communications via telephone or videoconferences and earlier consultations with allied health workers (e.g., social workers and psychologists).

With a decreased workload on some surgical services, fewer opportunities to speak directly to patients and their families and fewer in-person discussions with other health professionals, there is a risk of trainees falling behind in achieving competence in the collaborator role. However, structural changes related to COVID-19 have created opportunities and strategies to collaborate via multidisciplinary tumour boards, daily handover rounds, and case discussions delivered using virtual methods. The pandemic has also emphasized the importance of clear communication and documentation of treatment plans to ensure effective collaborative care, especially when patients have had procedures delayed or have received care that deviates from usual practice.

COMMUNICATOR

It is likely that there will be an increasing amount of patient care provided through videoconferencing or by telephone, even after the pandemic ends. Virtual patient care requires skills that have previously not been needed for in-person visits, such as identifying appropriate

patients for virtual care, ensuring patient confidentiality, and navigating the lack of nonverbal cues during virtual visits. Surgeons will need to ensure that clinical teaching remains a priority despite the use of virtual care. Virtual patient care can be taught by including trainees in consultations, observing the trainee in practice virtually, and ensuring ample discussions before and after the patient encounter. There are also opportunities to integrate simulation into modelling and practising good virtual communication skills. These techniques can maintain learning objectives and consolidate key concepts for trainees.

PROFESSIONAL

As critical members of the front line during the pandemic, trainees have had opportunities to demonstrate extraordinary professionalism as they provided care for patients. Residents have been exposed to aerosol-generating procedures, have been redeployed to unfamiliar clinical areas to help provide coverage, and have put themselves and their families at risk of exposure to COVID-19. Many trainees have been subjected to ethical dilemmas about what to do if they develop symptoms, how to cover for colleagues who are required to self-isolate, and how to balance their own safety with their duty to their patients and colleagues. The additional training in appropriate use of PPE and proper donning and doffing emphasizes the duty that trainees have to protect their patients and themselves.

The pandemic has provided an opportunity to reflect on how surgeons approach workplace sick leave. Previously, many surgeons have felt the need to attend clinic or to operate while ill, as there was no mechanism for coverage in place. Developing mechanisms that allow physicians to stay home without repercussions when they are sick will undoubtedly improve wellness among both trainees and surgeons.

LEADER

During the pandemic, trainees have been leaders within their own training programs by helping to ensure adequate clinical coverage and staffing despite variability in numbers due to redeployment, isolation, and sick leave. They have also led changes by incorporating web-based conference solutions into delivering didactic teaching sessions, restructuring interviews for postgraduate training positions, and navigating the changes to their certification exams.

Throughout the pandemic, trainees have witnessed key aspects of health care leadership, including resource allocation, human resource management, and pandemic planning. While these skills have not previously been a critical aspect of surgical training, they will no doubt be invaluable to these future surgeons.

HEALTH ADVOCATE

The pandemic has magnified and brought attention to health disparities among minority groups with higher rates of infection, hospitalization, and death from COVID-19 among Black, Hispanic and Asian people.³ This has prompted multiple initiatives in raising awareness in equity, diversity, and inclusivity within the medical community and will likely be integrated into medical education curricula.

Advocacy for patients in the face of health care system upheavals has also been a new area for trainees to navigate. Hospitals have reduced the number of in-person visits and have placed restrictions on what patients may be accompanied by family and/or friends. Trainees have been instrumental in advocating for patients to ensure that they continue to receive appropriate clinical care and that they feel supported despite these restrictions; for example, arranging multiple investigations and specialist consultations to be completed during a single visit when possible to reduce the number of hospital visits and to minimize exposure risk.

MEDICAL EXPERT

Even as restrictions on operating rooms begin to be lifted, trainees will continue to face obstacles in obtaining the total operative numbers to be deemed “competent.” Between March 15 and June 13, 2020, the estimated backlog in Ontario was 148 364 surgeries (95% prediction interval 124 508–174 589), an average weekly increase of 11 413 surgeries.⁴ It is known that surgeries involving trainees require additional time,⁵ and surgeons will need to balance educational opportunities with the time pressures arising from the surgical backlog. Employing tools such as simulation, virtual learning,⁶ and pre- and postoperative coaching⁷ may help maximize learning opportunities within the operating room.

In addition, as restrictions are lifted, it is likely that operations for symptomatic benign surgical diagnosis will continue to be delayed, as they are “lower priority.” Trainees and preceptors need to be aware of the case mix being performed, and additional time may be needed at a later date to ensure trainees do not have deficiencies in knowledge of or operative exposure to these conditions. As many postgraduate training programs in Canada follow the competency-based medical education model, this may affect the timing for completing postgraduate training milestones and entrustable professional activities.

CONCLUSION

The COVID-19 pandemic has changed how we practise medicine and how we deliver medical education. We have provided some reflections on how surgical trainees can achieve the CanMEDS roles in the COVID-19 era. Future studies are necessary to assess the impact of COVID-19 on postgraduate trainees and surgical training.

Affiliations: From the Division of General Surgery, Department of Surgery, University of Toronto, Toronto, Ont. (Ko, Berger-Richardson, Brar, Cil); the Department of Surgical Oncology, Princess Margaret Cancer Centre, University Health Network, Toronto, Ont. (Lim, Cil); and the Women’s College Research Institute, Women’s College Hospital, Toronto, Ont. (Lim).

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References

1. American College of Surgeons. Recommendations for prioritization, treatment and triage of breast cancer patients during the COVID-19 pandemic: executive summary version 1.0. Chicago: ACS; Mar. 25, 2020.
2. Collard M, Lakkis Z, Loriau J, et al. Antibiotics alone as an alternative to appendectomy for uncomplicated acute appendicitis in adults: Changes in treatment modalities related to the COVID-19 health crisis. *J Visc Surg* 2020;157:S33-S42.
3. Rubin-Miller L, Alban C, Artiga S, et al. COVID-19 racial disparities in testing, infection, hospitalization, and death: analysis of Epic data. KFF; Sept. 16, 2020. Available: <https://www.kff.org/coronavirus-covid-19/issue-brief/covid-19-racial-disparities-testing-infection-hospitalization-death-analysis-epic-patient-data/> (Accessed 2021 Feb. 8).
4. Wang J, Vahid S, Eberg M, et al. Clearing the surgical backlog caused by COVID-19 in Ontario: a time series modelling study. *CMAJ* 2020;192:E1347-56.
5. Vinden C, Malthaner R, McGee J, et al. Teaching surgery takes time: the impact of surgical education on time in the operating room. *Can J Surg* 2016;59:87-92.
6. McKechnie T, Levin M, Zhou K, et al. Virtual surgical training during COVID-19: operating room simulation platforms accessible from home. *Ann Surg* 2020;272(2):e153-e154.
7. Guidolin K, Yan H, Quereshey F. The “teaching time-out”: a novel framework for surgical education. *Can J Surg* 2020;63:E208-10.