

# Impact of COVID-19 on surgical registrars' education and training

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## Summary

The coronavirus disease 2019 (COVID-19) pandemic has affected all aspects of medical practice in unprecedented ways. It has already produced significant changes within most hospitals, including, cancellation of elective procedures, decreased volume of acute care surgery, and cancellation of lectures and educational conferences to adhere to social distancing recommendations. This article focuses on the effects of the COVID-19 pandemic on surgical registrars, their education and training and proposes ideas on how to get through this major disruption.

## Introduction

The severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) and the disease it causes, coronavirus disease 2019 (COVID-19) has created an unprecedented and challenging pandemic situation.<sup>1</sup> COVID-19 has demonstrated a propensity to spread at an exponential rate, significantly impacting many lives and affecting our practice as surgeons.<sup>2</sup> It presents a rapidly evolving set of circumstances, all of which place a strain on our healthcare systems and providers, as well as forcing difficult choices about patient care.<sup>3</sup> The need to dedicate major economic, infrastructural, and medical resources to the assistance of critically ill COVID-19 patients is causing a redistribution of the activities of several medical and surgical disciplines not primarily involved in the management of COVID-19 patients.<sup>4,5</sup> Critical decisions concerning the deployment of resources and the management of elective surgical procedures have been made based on institutional policies and recommendations from provincial and national authorities, considering the availability of finite and essential resources.<sup>6,7</sup> Surgeons have been forced to reassess nearly every aspect of their daily surgical practice.<sup>6,7</sup> Elective surgeries have been cancelled, and out-patient clinics have been considerably reduced. Surgical registrars are essential members of the surgical team and will tackle the constantly evolving clinical exigencies of the COVID-19 pandemic. While there is uncertainty about the scale of disease that South Africa will experience, there is unanimity that this is a time for us to demonstrate those qualities that make us surgeons: commitment, teamwork, flexibility, and compassion. As the pandemic develops, it is clear that many surgeons will be at the forefront of health care for affected patients. The effect of this unfamiliar and developing COVID-19 situation on surgical registrars cannot be overlooked. Through this prism, suggestions are made aiming at supporting surgical registrars, through their education and training by addressing a number of

uncertainties and considerations regarding surgical practice, safety, and overall patient care.

## Redeployment considerations

Ideally surgical registrars should be working within their existing speciality/skill set in an acute setting. However, as the COVID-19 outbreak has escalated, surgical registrars are increasingly being deployed to staff areas of major clinical need that are outside their usual scope of practice. Residents deployed to clinical areas with which they are unfamiliar must receive appropriate induction, training and supervision for the tasks they will be asked to perform. Supervision should be from appropriately qualified specialists who are competent to make decisions within the relevant speciality or healthcare setting about treatment or discharge of patients. Redeployment strategies involving surgical registrars should be developed that consider the training needs of the residents, building on core competencies while addressing clinical demand. Field promotion of post-fellowship registrars to specialist roles, must be actively considered in COVID-19 response planning as staff absences will reduce the workforce.

## Surgical registrar health and wellbeing

The health and wellbeing of surgical registrars and medical officers is a core value of all postgraduate surgical training programmes. Surgical registrars must adhere to the appropriate use of personal protective equipment (PPE) to protect themselves, patients and staff from COVID-19 transmission.<sup>6</sup> The Department of Health should take all necessary steps to make sure surgical registrars are suitably equipped and instructed in its proper use in line with their PPE policies.<sup>6</sup> At my institution, videos were circulated to surgical registrars regarding appropriate donning and doffing procedures with regard to PPE. Inadequate provision of PPE poses dilemmas for the surgical trainee in the front line and difficult decisions may need to be made quickly

about the safest and best course of action, taking account of the clinical situation.<sup>7</sup> Surgical trainees cannot leave patients without treatment, but they cannot provide care without regard to the risks to themselves or others. Their superiors must hold management accountable when supplies of PPE are inadequate and develop guidelines as to what to do in such circumstances.

If surgical registrars suspect or know that they are infected with coronavirus they must follow the current South African Department of Health advice.<sup>8</sup> They should be tested directly for SARS-CoV-2, as testing is most effective within three days of symptoms developing, they should not attend work and should notify their line managers and occupational health department immediately. If their symptoms worsen, they must seek medical attention. Those who test negative for SARS-CoV-2 can return to work when they are medically fit to do so, and after discussion with the individuals they originally notified. The COVID-19 Online Resource and News Portal of the South African Department of Health states that "...anyone who tests positive will immediately be notified and put into quarantine at home or at a facility designated to manage the outbreak. You will then remain in quarantine until repeat testing shows you no longer have the virus."<sup>9</sup>

Apart from the risks of becoming infected, this pandemic is extremely stressful for registrars across all disciplines who are working long hours. Hence it's vital for them to keep hydrated, fed, and get the rest they need, with the support of their team and employer. Patients should have the expectation that the doctors giving them care are sufficiently rested and focused. Heads of surgical departments and divisions must take into consideration the psychological, physical and economic stressors that the pandemic brings to the equation and that they will have lasting impacts on many of their surgical trainees. These will also include stressors outside the work environment such as childcare responsibilities particularly related to the schooling of their young families. The provision of wellness support for trainees, even after the peak of the pandemic has passed as well as flexibility in the work place, are essential.

## **Surgical registrar education and training in the COVID-19 pandemic**

### ***Basic tenets***

The four basic objectives underpinning surgical education have not changed: (i) a sound knowledge base; (ii) good communication skills; (iii) proficient technical skills; and (iv) excellent clinical judgement.<sup>10</sup> This latter characteristic cannot be understated in its importance. Surgical curriculum, skills' courses and competency assessment programmes are already in place with dedicated and trained faculty.<sup>10</sup> Surgery always has been, and always will be, a craft speciality. The acquisition of psychomotor skills is, therefore, essential, but this must be done on the background foundation of adequate knowledge, communication skills and clinical judgement.<sup>9</sup> The teaching of operative surgery requires the input of an experienced surgeon at the operating table, guiding, teaching and instructing the surgical registrar as they perform a given operative procedure.<sup>11,12</sup>

### ***Virtual platforms for cognitive learning***

Social distancing measures have prevented the traditional experiential educational component of surgical registrar training. Bedside teaching, grand rounds, weekly lectures and conference attendance for registrars are on hold and teaching has moved to online virtual learning, conducted through platforms such as Skype, Zoom and Microsoft Teams and industry sponsored webinars and podcasts. One of the challenges instructors face with virtual education is encouraging active participation from a remote site, which is known to improve performance. The use of smaller group remote learning is probably better for both instructors to assess understanding of the subject matter and knowledge deficits, and to encourage individual surgical registrars' participation. Audience response systems can be integrated with other instructional methods to enhance interaction and active learning.

Self-directed learning is a fundamental principle of adult education.<sup>13</sup> Surgical registrars should use this time to study textbooks, online learning and articles, and virtual educational modules.<sup>14,15</sup> Innovative adaptation of long-standing lecture courses and meetings to online delivery, would allow trainees access to a comprehensive core curriculum. Webinars are an easy-to-access additional up-to-date resource for this remote virtual learning era, but they need to be incorporated into more interactive teaching methods to give context and aid retention. The fast-growing availability of new data, guidelines and recommendations, provides surgical registrars the opportunity to expand their skill set in crisis response, resource allocation, and other areas of frontline or critical care work.<sup>16,17</sup> It is more important now than ever for surgical registrars to remain connected via online portals and exchange ideas with each other through social media and surgical society forums. Responsible communication skills through social media can support fellow trainees and alert their surgical followers to educational opportunities.

### ***Teaching psychomotor skills***

Teaching registrars the core psychomotor skills required for clinical practice remains an ongoing challenge in the twenty-first century. Most psychomotor skills are unique to each discipline and are required to perform specific clinical practice roles to deliver competent patient care. There is limited evidence, with regards to skill acquisition and retention, to suggest the widely accepted four-step and five-step skill teaching models, have application to teach a complex skill.<sup>18,19</sup>

These existing challenges of teaching of psychomotor skills have been severely compounded by COVID-19 containment measures. These measures allow only essential, usually consultant staff, to participate in surgical cases hence denying trainees learning opportunities. The potential solution may lie in the resulting backlog of patients for diagnosis and therapy that will arise when we return to pre-COVID-19 "normal" surgical activities. This increased workload can substantially increase the volume of surgical procedures available to train their surgical trainees. These opportunities for the expansion of trainees operative exposure will once again require innovative restructuring of clinical and academic practice to allow registrars to achieve critical targets.

## **Surgical exams**

Education and training has been disrupted as the healthcare system responds to increased pressures. When surgical registrars miss progression assessments, examinations and training due to COVID-19 pressures, universities and the Provincial Health Departments should ensure that there are clear plans to deliver them once the pressure reduces. Postgraduate primary, intermediate and fellowship examinations of the Fellowship of the College of Surgeons of South Africa and specialist registration have been postponed. For many surgical registrars, this is an extremely disheartening and disruptive period, further compounded by the inevitable backlog that will delay access to Basic Surgical Skills, Basic and Essential Surgical Skills Training and Advanced Trauma Life Support courses that are mandatory for progression to their summative assessments. Postgraduate surgical training programmes should be adaptable and accommodating with an extended training time if necessary as exams are postponed and registration of specialists is postponed. There will also be an effect on the contractual and funding restrictions of supernumerary registrars.

It is clear that the committees of the College of Medicine of South Africa and the Universities providing postgraduate surgical education and training must work together around the COVID-19 response. They must consider the need for suitable amendments, when possible, to the arrangement and scheduling of postgraduate surgical examinations to allow capable surgical registrars to progress to become specialists. In addition, examination prerequisites may need adjustment given the changing disruptions and burdens, for example, hardship exemptions for case logbook minimums and re-scheduling of postgraduate surgical examination plans. It is up to their heads of departments to sign off on the eligibility of individual registrars to sit the fellowship examinations. There is a pressing need to include meaningful work-based competence assessment to appraise registrars' performance and competence in their normal practice, but these must be standardised and their validity ensured. Disruption this year may well have flow-on effects to subsequent years for individual surgical registrars. The rigorous criteria of surgical competence must be upheld while adapting expectations of trainees during the COVID-19 will require an understanding countrywide approach. However, the assessment of surgical competency during the COVID-19 pandemic is becoming even more important and should be a professional priority as well as being based on patient safety and political imperatives.

## **Surgical research**

Research has been curtailed at many institutions. Institutional health research ethics committees have stopped in-person participant visits. Most surgical society meetings have been cancelled, resulting in decreased collaborative and networking opportunities for surgical registrars. Trainees and their mentors should be encouraged to have discussions regarding projects and protocols able to be worked on during the pandemic, securing grant funding for future studies, finishing works-in-progress into presentable abstracts or publishable studies, and completing MMed theses. In addition, COVID-19 offers the opportunity for surgical registrars to develop research projects due to the

novelty of the disease and the small but rapidly expanding pool of knowledge about the pandemic.<sup>15,16</sup>

## **Conclusion**

The impact of the COVID-19 pandemic is dynamic and the worst is probably yet to come.<sup>3</sup> The impact of COVID-19 on surgical training programmes has been profound and will continue to increase as the pandemic spreads in South Africa. Surgical education and training must continue during the COVID-19 pandemic and will offer surgical trainees many frustrations yet also new possibilities and experiences. While pandemics are, by their nature, self-limiting, no clear end date is in sight for this one.<sup>3</sup> It is important for all surgical registrars to stay informed and compliant with measures to contain COVID-19 without complacency or panic. Surgeons and registrars can work together to create sustainable solutions to ensure safety, promote education, and ensure wellbeing and above all look after patients.


## **Conflict of interest**

The author declares no conflict of interest.

## **Ethical approval**

This article does not require Research Ethics Committee approval.

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