

# Early adaptation of urology residency educational programs during COVID-19 clinical and gathering restrictions

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## Introduction

COVID-19 has profoundly disrupted healthcare systems worldwide. Changes to clinical care, including cancellation of elective surgeries and near wholesale shift of outpatient visits to tele- or e-consults, have impaired experiential learning. In-person didactic or small-group sessions, housestaff rotation, and licensing exams have been cancelled or made impossible, with necessary shifts to remote education.

This crisis uniquely affects surgery programs, as trainees must develop operative skills alongside clinical expertise. Urology training programs have had to quickly adapt to pandemic regulations, which indirectly mandate reduced clinical duties and operating room (OR) exposure.<sup>1,2</sup> As a result, there has been reduced OR access to assist in limiting personal protective equipment (PPE) use, cancelled off-site rotations, modified call duties, and limited outpatient contact.<sup>1,3</sup>

Given these unprecedented limitations, there has been a drastic shift towards online learning, shown to be an effective teaching tool in resident education.<sup>4</sup> This includes the use of online platforms such as Zoom for didactic learning and journal clubs, and the promulgation of online lecture series hosted through several institutions.<sup>5,6</sup> There is little clarity on the best approach, however, multiple modalities are being used to continue and enhance resident education. Our study captures how Canadian urology residency programs have adapted their educational approaches and departmental procedures.

## Methods

A 25-question, anonymous survey was created using Google Forms, and circulated to all urology program directors in Canada from May 5, 2020 to May 13, 2020. Research ethics approval from the Health Sciences Research Ethics Board (HSREB) was obtained prior to survey circulation. The purpose was to assess the effect COVID-19 is having on academic urology programs in Canada in terms of clinical training, the educational program, and on the department as a whole. Summary statistics of quantitative data and scales were performed, and free-text data was assessed qualitatively for themes.

## Results

The survey response rate was 76% (10/13 programs). Clinical duties for residents have changed drastically; 90% of residents have been put on a rotating schedule of presence in hospital to minimize exposure risk and 60% of resident yearly rotation schedules have been altered. Outpatient clinics have converted mainly to telephone or virtual visits in all programs; residents partake in selected visits (50%), have been excluded entirely (30%), or see a small number of patients in clinic or cystoscopy in select settings (10% and 10%, respectively). Call schedule changes have been made in 90% of sites to mitigate against resident exposure. Very few programs partially redeployed their residents (30%) and attending staff (20%) to the emergency department, intensive care unit, or medical floors.

OR participation has decreased in 90% of programs due to limitations on PPE use (60%), prioritization of senior resident access (20%), or as a function of resident scheduling changes (10%). Elective surgeries have been cancelled in all respondents' jurisdictions; no surgeries are broadcast online for residents.

Resident teaching has kept a similar topic structure in 70% of cases, where 30% of programs have added online lecture logs, peer teaching, or access to online lecture series in some cases. Online resources used for educational

purposes have included programs such as Zoom, Microsoft Teams, PollEverywhere, and the UCSF COVID Lectures Series.<sup>7</sup> Journal clubs have moved online (70%) or been cancelled (30%). In 70% and 80% of sites, the competence committee and residency program committee, respectively, have held special meetings; 70% feel the duration of the crisis will not impact competence-by-design program completion, although two programs note a shift to specifically focus on non-clinical entrustable professional activities.

## Discussion

Academic urology programs have adapted to the fluid conditions of COVID-19, working to maintain balance between resident and patient safety, while continuing resident education. Residents are unfortunately facing “double jeopardy,” with decreased clinical and operative opportunities. The effects of the pandemic on future resident performance remains to be seen, but clearly, COVID-19 has substantially decreased clinical experiences for an extended period of time.

Despite this, there has been a significant uptick in the use of digital teaching and clinical activity. eHealth has arisen rapidly to conduct outpatient clinics in all programs that responded, which may invite benefits in scheduling and clinic workflow, as well as decreased patient travel and exposure risk. Residents are gaining exposure to this new paradigm, which may pay dividends in the transition to independent practice.

The observed massive shift to online resident education may incur losses in the delivery and interactivity of teaching sessions and examination practice. Audio channels in online environments do not replicate organic in-person conversation, and the usual paper-based OSCE or mock examination processes are lost or attenuated. Several online lecture series have emerged featuring urological thought leaders; these are broadcast live to allow for participation and recorded for future reference and on-demand viewing.<sup>7,8</sup> These are being incorporated into some Canadian teaching programs, allowing opportunities for continuing professional development certification as well.<sup>5,6</sup> Investment by and increasing experience of educators may see new or innovative teaching strategies arise.

This study was done as a survey, which presents with its own limitations. The scope is limited, with mostly closed-ended questions, although free text options were available. The study is necessarily limited to cross-sectional snapshots regarding clinical and education changes, without pro-

spective or outcomes-based analysis of resident performance. Adaptations made over the future course of the pandemic similarly cannot be measured. Three programs did not respond; reasons are not known but may reflect time constraints, loss of the survey request in a crowded email inbox, or due to the English-only distribution of the survey. Anonymous delivery and data acquisition prevented us from identifying the three programs.

## Conclusions

Urological education and training were torn asunder by the emergence of the COVID-19 crisis, and programs have adapted within their means very rapidly and with high concordance; no doubt we may hold on to some of these changes going forward, both through necessity and the discovery of some benefit to residents. This pandemic challenges all residency programs, but surgical residents face the unique issue of experiential learning both in the OR and clinic, with unclear impact depending on the duration of restrictions.

**Competing interests:** The authors report no competing personal or financial interests related to this work.

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