

Cardiovascular Training During the COVID-19 Pandemic in Canada

Impact to and Recommendations from the Canadian Cardiovascular Society Trainee Committee

Background

In response to the COVID-19 pandemic, health systems across Canada have implemented emergency restructuring in an attempt to optimize workforce well-being, comply with physical distancing requirements and continue excellent patient care. While these measures have proven widely successful in “flattening the curve”, they have significantly altered the learning environment for trainees. Clinical cardiology, cardiac surgery and cardiac subspecialty training programs, as well as graduate and post-graduate research trainees, have all been affected by restrictions. We are experiencing a marked decrease in acute cardiac patient volumes and elective procedures as well reductions in research and educational activity. The majority of outpatient clinics and elective rotations have been postponed. Research, educational events, and conferences have been delayed or cancelled.

This document provides recommendations on the evolving role of Canadian cardiovascular trainees, including adult and pediatric core cardiology residents, cardiac surgery residents, subspecialty fellows and basic cardiovascular scientists, during the COVID-19 pandemic.

Guiding principles

In preparing this document, the Canadian Cardiovascular Society Trainee Committee has employed the following framework for making recommendations:

1. **Education:** Education is a core activity of all health systems. Efforts should be made to ensure both competence and timeliness of training completion
2. **Clinical role and appropriate responsibilities:** The service provided by cardiovascular trainees should reflect the training goals and the existing skills and qualifications of the trainee. Redeployment to non-cardiac services should be considered only once all other more suitable providers are no longer available.
3. **Safety and reasonable exposure:** Exposure to potential COVID-19 positive patients is a necessary consideration for all activities and deployment strategies. Trainees are entitled to the highest standards in exposure-appropriate personal protective equipment (PPE) for all clinical encounters.

Royal College examination, credentialing, and training duration

The Royal College of Physicians and Surgeons of Canada (RCPSC) has postponed the delivery of Spring 2020 certification exams to September 2020 at the earliest and cancelled oral examinations. Cardiac Surgery trainees were originally scheduled to be tested in Spring 2020. The status of the Fall 2020 RCPSC exams for subspecialties, including Adult Cardiology and Pediatric Cardiology, remains undetermined.

This uncertainty in the timing of the exam is affecting trainees' study preparation, ability to attend the examination due to travel/quarantine issues for those abroad and has raised concerns on their timely certification. The timing of the RCPSC exam also has significant implications on training timelines (e.g. subspecialty fellowships) and employment. Recognizing the high quality of clinical cardiovascular training across Canada and consistently high passing rates of board certification in cardiovascular medicine and its subspecialties, balanced with minimizing the impact on qualified trainees seeking to enter the workforce and/or pursue subspecialty training, we recommend that:

1. Trainees previously scheduled to complete their training on June 30th, 2020 should have the opportunity to apply for independent licensure effective July 1, 2020.
2. RCPSC certification testing at the end of training should be performed in a timely manner and without delay. The RCPSC has sent an email commitment to the trainees that the Fall 2020 exam will be administered in late September with a minimum of six weeks' notice. For exams with both a written and oral component, the period between the components should not exceed the normal interval (e.g. a written exam in the Fall of 2020 and an oral exam in the Winter or Spring of 2021 would be an excessive delay between exams).
3. For candidates taking the Spring 2020 exam in the Fall of 2020, the format and content of the written exam should remain as if it were being administered in Spring 2020 (i.e. the exam candidates have previously been instructed that the content of the written encompasses the objectives of training until the end of 2019). As the field of cardiovascular medicine continues to evolve, it is critical that trainees are not expected to learn a nebulous amount of material without a specified end date.
4. Graduating trainees should be offered the opportunity to complete their Structured Assessment of Clinical Evaluation Report (STACER) before the end of the academic year.
5. Duration of training should largely remain unchanged due to the current pandemic. Flexibility should be applied by educational programs to allow prolonging training at a trainee's request when their training has been negatively affected by the pandemic. In this context, programs can provide supporting documentation in the trainee's record to explain prolongation of training. Furthermore, if the impact upon training lasts several months, and trainees lose this time, it should be clearly communicated that such delays in the completion of programs are not looked at unfavourably.

Education and didactic teaching

In-person teaching, rounds, or conferences have all been interrupted due to the social distancing rules. In many areas of cardiovascular education, there has been a shift to virtual meetings and education. Didactic teaching remains extremely beneficial for cardiovascular trainees. Given the uncertainty around the duration of this pandemic, postgraduate training programs should use the protected teaching time to offer academic sessions virtually through video conferencing platforms (e.g. Zoom, GoToMeeting, Google Hangouts, etc) for trainees. We encourage the educators to integrate audience response systems or other instructional methods for active learning. We recommend that:

1. Academic sessions continue to be offered “virtually”, with regular protected educational time allotted to trainees. Opportunities for additional simulation training should be offered wherever possible.
2. As challenges with clinical exposure and opportunities continue, programs should consider specific curriculum changes to transition towards competency-based education and evaluation.
3. Trainees will need support to make up lost learning opportunities after the pandemic. Where trainees are deployed away from “subspecialty” rotations (e.g. echocardiography, electrophysiology, interventional, congenital, etc) and toward “service” rotations (e.g. ICU, CCU, CTU), programs should prioritize rescheduling the learning rotations as soon as possible. Programs should recognize that they may need to bring in alternative labour (e.g. physician’s assistants, nurse practitioners, non-teaching physician led clinical services) to facilitate trainee learning experiences after the pandemic.

Redeployment

Trainees have a unique position within the healthcare system, serving the dual roles of “learner” and “employee”. Trainees are typically employed by the regional health authority or provincial ministry of health. Under exceptional circumstances of clinical need, postgraduate trainees may be asked to be redeployed to services such as hospital emergency rooms, intensive care units, or medicine wards. Redeployment is an opportunity for cardiovascular trainees to stand in solidarity with other frontline health workers in caring for patients, and trainees are eager to contribute. Many residents and subspecialty fellows are already certified by the RCPSC and hold independent practice licenses in areas of emerging clinical need. We recommend that:

1. There should be transparency and consultation with trainees in the redeployment process. Redeployment needs may evolve during the pandemic, and ultimately, should reflect a balance between trainee suitability and clinical need.
2. Trainees should be redeployed to areas of current clinical need which are most in line with their educational goals. This is balanced with the needs of the healthcare system.

- a. Example 1: Adult cardiology trainees should be redeployed preferentially to the Cardiac Care Unit, Intensive Care Unit, or Internal Medicine in a senior fellow capacity or higher (see point 3).
 - b. Example 2: Pediatric cardiology trainees should be redeployed preferentially to the pediatric emergency, pediatric intensive care unit, neonatal intensive care unit, or general pediatric ward in a senior fellow capacity or higher (see point 3)
 - c. Example 3: Cardiac surgery trainees should be redeployed preferentially to the Cardiac Care Unit, Intensive Care Unit, or to the post-surgical ward, depending on their postgraduate level of training.
3. Trainees who are asked to move from their training specialty to work in an area in which they have already achieved RCPSC competency and hold independent licensing should receive responsibilities that are commensurate with their existing certification and maximize their skillsets.
 - a. *Example 1.* Adult cardiology residents with RCPSC competency in Internal Medicine who are redeployed to an Internal Medicine service should receive an appropriate role matching and maximizing their skillsets.
 - b. *Example 2.* Pediatric cardiology trainees with RCPSC competency in Pediatrics who are redeployed to the Pediatrics ward or to a level 2 NICU should receive an appropriate role matching and maximizing their skillsets.
 - c. *Example 3.* Clinical fellows in Cardiology or Cardiac Surgery who are redeployed to areas of their RCPSC competency should receive an appropriate role matching and maximizing their skillsets.
4. In some cases where trainees take on duties that are not normally part of their training program, it may be reasonable for them to receive remuneration. This is particularly relevant in scenarios where trainees hold applicable independent licensure. This issue should be examined in honest, bilateral discussions between trainees and programs. Normal local practices occurring prior to the pandemics, including positions (e.g. Clinical Associate, Junior Attending, House Medical Officer, etc.) and compensation models (e.g. billings, stipends) may serve as a useful guide to select appropriate models.
5. Trainee redeployment should largely remain voluntary, and redeployment plans should be individualized for each program. There are also various individual circumstances where trainees may feel inadequately ready for redeployment, and such situations should be considered on a case-by-case basis. Redeployment of trainees in their final stages of training should not interfere with their ability to complete the requirements of their training program.
6. In exceptional cases where trainees are redeployed to areas significantly outside of their field of training (e.g. pediatric trainees being redeployed to adult services and vice versa), they should be adequately supported and supervised.
7. Trainees with specific health needs (e.g. immunocompromised status, pregnancy) should have their individual needs taken into consideration.

Invasive cardiac procedures and interventions

Procedures are an integral part of the curriculum in core cardiology, cardiac surgery and cardiac subspecialties. Procedures are particularly important for trainees who are acquiring training in interventional cardiology, structural heart diseases, clinical cardiac electrophysiology or cardiac surgery. During times of pandemic, the educational aspects of procedural learning should be balanced with the exposure risk. Trainees should continue to participate in most procedures and operations with availability of adequate personal protective equipment (PPE). We recommend that:

1. Decisions for trainee participation should balance the perceived risk of exposure, PPE availability, trainee educational needs and the trainee's current level of competency.
2. Plans for managing trainee exposure risk during procedures should distinguish between high-risk aerosol generating medical procedures encountered in cardiovascular medicine (e.g. endotracheal intubation, transesophageal echocardiography, cardiopulmonary resuscitation) and other procedures.
3. Trainees should be allowed to maintain continuity of care beginning at initial consultation and continuing throughout hospitalization (including bedside interventions, procedures and surgery). Trainees who participate in peri-operative care should also be involved in operative care.
4. As long as the exposure risk is not high and there is adequate access to PPE, trainees should be able to participate in non-invasive procedures (like point-of-care ultrasound), invasive procedures (ranging from central line insertion, pulmonary artery catheter insertion, temporary transvenous pacemaker insertion, arterial line insertion) and all cardiac surgical procedures, consistent with their training objectives.
5. Special consideration should be made for the achievement of technical competencies necessary for program completion for trainees nearing the end of training requiring such competencies.
6. Programs should identify the unique and emerging procedural opportunities brought about by the pandemic and make these safe learning opportunities wherever possible.
7. Simulation teaching should be provided to compensate for any missed learning opportunities.

Ambulatory clinics

Telehealth is emerging as a critical tool to connect physicians with patients dealing with cardiovascular conditions during the COVID-19 pandemic. Although there are inherent learning limitations with telemedicine especially in patients with pertinent physical exam findings, there is still great educational value for cardiology trainees in participating in telehealth. Therefore, cardiovascular trainees should be

integrated with the telehealth clinics to ensure continued clinical exposure, avoiding further missed learning opportunities that necessitate training extension. We recommend that:

1. Trainees should be involved in all aspects of telehealth for continued learning and clinical exposure, including triaging urgent ambulatory visits and new referrals. We recognize that the typical “rotation blocks” schedule may no longer apply in various institutions, and clinical learning opportunities and telehealth visits should be identified for trainees as they become available (irrespective of “rotation blocks”).
2. Trainees should receive appropriate supervision while conducting telemedicine visits.

Research

Activities have been minimized to essential research only, or completely suspended at many institutions, with laboratory closures and research boards mandating to stop basic science and clinical research requiring in-person patient involvement. This will disrupt many in-progress work, affect publication productivity for trainees and affect the viability of present research grants and near future ability to apply for further funding offered to cardiovascular trainees. All of these aspects could delay training, graduation, and the scientific careers of cardiovascular trainees. We recommend that:

1. Cardiovascular research programs, principal investigators, and research supervisors should have discussions with trainees regarding suitable projects to work on during the pandemic and reshaping disrupted works-in-progress into publishable or presentable material.
2. Trainees must be advised on best practices while in their time working remotely, e.g. writing of thesis chapters, literature review articles, research papers, and attending and participating in online learning options.
3. Institutions and granting bodies should formulate plans for funding extensions for lost time. Plans and appropriate actions should be implemented to ensure viability of research and future funding opportunities once full research abilities are resumed.
4. The scientific community should endeavour to find innovative ways to deliver meetings, conferences and summits with the goals of providing education, promoting career growth and advancement of science.

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