

These training requirements apply to those who begin training on or after July 1, 2025.

In addition to Surgical Foundations experiences,¹ the following training experiences are required, recommended, or optional as indicated:

TRANSITION TO DISCIPLINE (TTD)

The focus of this stage is on identity formation and verification of clinical skills. This includes the orientation of new trainees to the structure, policies, resources and expectations of the program; an introduction to foundational surgical skills; and exposure to the technical skills of Cardiac Surgery. During this stage residents reconfirm the competencies of medical school and participate in cardio-vascular procedures on uncomplicated patients.

Required training experiences (TTD stage)

1. Clinical training experiences:

1.1. Cardiac Surgery

- 1.1.1. Outpatient clinic
- 1.1.2. Operative experience
- 1.1.3. Inpatient service
- 1.1.4. Afterhours coverage

2. Other training experiences:

- 2.1. Formal teaching via academic sessions and/or e-modules, topics to include recognition and management of common post-operative complications including but not limited to bleeding, arrhythmias, volume overload, pneumothorax, renal dysfunction, hypotension, hypertension, hypoxia, delirium, and infection

¹ Surgical Foundations provides a common curriculum and clinical training in the fundamental skills of surgery for residents in nine Royal College recognized surgical disciplines including Cardiac Surgery.

- 2.2. Orientation to expectations for professional and ethical behaviour, and performance with regards to communication and provision of person centered care
- 2.3. Orientation to Competence by Design and the expectations for training experiences, program, and assessment, including the documentation of activities in a Portfolio
- 2.4. Orientation to institutional policies and procedures including those for:
 - 2.4.1. Resident wellness and safety
 - 2.4.2. Patient confidentiality and use of the electronic health record, digital images, and social media
 - 2.4.3. Occupational health and safety relevant to surgery including but not limited to basic ergonomics, appropriate handling of sharps, radiation safety, fire safety, and infectious hazards
 - 2.4.4. Respectful workplace, including intimidation and harassment
 - 2.4.5. Code of conduct
- 2.5. Orientation to the operating room suite and procedures, including team communication and collaboration with other health care professionals
- 2.6. Focused experience providing early clinical and technical skills training (e.g., boot camp)
- 2.7. Simulation training experiences in technical procedures relevant to Cardiac Surgery

FOUNDATIONS OF DISCIPLINE (F)

The focus of this stage is to develop the knowledge and skills required to assess, diagnose and provide initial care for the breadth of patients with cardiovascular illnesses. As supervised participants on an inpatient team and through increasing exposure to the operating room (OR), trainees demonstrate the ability to assess preoperative risks, perform foundational procedures in Cardiac Surgery, and manage routine postoperative complications. Residents at this stage will also produce a proposal for scholarly work.

Required training experiences (Foundations stage)

- 1. Clinical training experiences:
 - 1.1. Critical care service
 - 1.2. Service that provides initial trauma management (such as Emergency Medicine, General Surgery, or trauma team)
 - 1.3. Cardiac Surgery
 - 1.3.1. Outpatient clinics
 - 1.3.2. Operative experience
 - 1.3.3. Inpatient service
 - 1.3.4. Afterhours coverage

- 1.4. Vascular Surgery
- 1.5. Cardiac anesthesia
- 1.6. Cardiac echocardiography
2. Other training experiences:
 - 2.1. Formal teaching via academic session and/or e-modules, topics to include:
 - 2.1.1. Cardiopulmonary bypass circuit design and function
 - 2.1.2. Surgical assessment of patient frailty
 - 2.1.3. Infectious disease as related to cardiac surgery
 - 2.1.4. Diabetes management
 - 2.1.5. Hematology and thrombosis
 - 2.2. Initiation of a scholarly project

Recommended training experiences (Foundations stage)

3. Clinical training experiences:
 - 3.1. Thoracic surgery
 - 3.2. Coronary care unit
 - 3.3. Cardiac imaging
 - 3.4. Cardiac catheterization laboratory

CORE OF DISCIPLINE (C)

The focus of this stage is to further develop the skills and knowledge required to manage the breadth of patients with cardiovascular disease and demonstrate core surgical skills as an effective member of the surgical team with a progressively increasing level of autonomy. While cultivating the skills necessary to practice independently at the consultant level, residents are exposed to teaching, research and administrative responsibilities. Trainees are assessed on their ability to manage complex patients, work collaboratively, engage in shared decision making, and contribute constructively to interprofessional teams and committees.

Required training experiences (Core stage)

1. Clinical training experiences:
 - 1.1. Cardiac Surgery
 - 1.1.1. Outpatient clinic
 - 1.1.2. Operative experience
 - 1.1.3. Inpatient service

- 1.1.4. Pediatric cardiac surgery
- 1.1.5. Afterhours coverage
- 1.2. Endovascular surgery
- 1.3. Cardiac catheterization laboratory
- 1.4. Cardiac rhythm device implantation
- 2. Other training experiences:
 - 2.1. Academic enrichment: scholarly work advanced clinical skill development, educational scholarship, and/or leadership development

Recommended training experiences (Core stage)

- 3. Clinical training experiences:
 - 3.1. Thoracic surgery

Optional training experiences (Core stage)

- 4. Clinical training experiences:
 - 4.1. Heart failure/mechanical support device clinic
 - 4.2. Transesophageal echocardiography

TRANSITION TO PRACTICE (TTP)

The focus of this stage is the consolidation of the clinical, surgical, and administrative skills in preparation for practice in Cardiac Surgery. Residents are assessed on their ability to demonstrate their skills not only in direct care but also at the level of the system of care, managing clinics, participating in resource management, and monitoring their practice for continuous quality improvement. This stage also provides opportunities for residents to refine their skills in performing the core procedures of cardiac surgery as well as increased exposure to advanced procedures and complex patient presentations.

Required training experiences (TTP stage)

- 1. Clinical training experiences:
 - 1.1. Cardiac surgery
 - 1.1.1. Outpatient clinic
 - 1.1.2. Operative experience
 - 1.1.3. Inpatient service
 - 1.1.4. Afterhours coverage

CERTIFICATION REQUIREMENTS

Royal College certification in Cardiac Surgery requires all of the following:

1. Proof of attestation in Surgical Foundations (see the Surgical Foundations standards on the "Information by Discipline" page of the Royal College's website)
2. Successful completion of the Royal College examination in Cardiac Surgery
3. Successful completion of the Cardiac Surgery Portfolio

NOTES

The Cardiac Surgery Portfolio refers to the list of entrustable professional activities across all four stages of the residency Competence Continuum and associated national standards for assessment and achievement.

Proof of attestation in Surgical Foundations is required for a resident to progress formally into the Core stage of training in Cardiac Surgery. Some residents may "reach ahead" to start working on elements of the Core stage in Cardiac Surgery but must present proof of the Surgical Foundations attestation to their program before they can be formally promoted into the Core stage of Cardiac Surgery.

Alternative routes of entry

Individuals who are eligible for certification in General Surgery or Thoracic Surgery, may be eligible for an accelerated course of training leading to certification in Cardiac Surgery, based on the achievement of competencies relevant to Cardiac Surgery in their primary discipline. Assessments of the achievement of relevant competencies will be made on an individual basis by the accepting cardiac surgery program and its postgraduate medical education office, following the principles of the Royal College Credentials policy.

MODEL DURATION OF TRAINING

Progress in training occurs through demonstration of competence and advancement through the stages of the Competence Continuum. There is no mandated period of training; historically, training in Cardiac Surgery has required six years. Individual duration of training may be influenced by many factors, which may include but are not limited to the resident's singular progression through the stages, the availability of teaching and learning resources, and/or differences in program implementation. Duration of training for any one individual is therefore at the discretion of the Faculty of Medicine, the Competence Committee, and program director.

Guidance for programs

The Royal College Specialty Committee in Cardiac Surgery suggested course of training, for the purposes of planning learning experiences and schedules, is as follows:

- Three blocks in Transition to Discipline
- 23 blocks in Foundations
 - At least nine blocks of cardiac surgery
 - Two or three blocks of vascular surgery
 - At least two blocks of critical care services
 - One block each of initial trauma management, cardiac anesthesia, and cardiac echocardiography
- 40 blocks in Core
 - At least 20 blocks of cardiac surgery, including three blocks of pediatric cardiac surgery
 - Three blocks of endovascular surgery
 - Three blocks of cardiac catheterization lab
 - One block of cardiac rhythm device implantation
 - No more than 13 blocks of academic enrichment
- Nine blocks in Transition to Practice

Guidance for postgraduate medical offices

For planning purposes, the stages of the Competence Continuum in Cardiac Surgery are generally no longer than three blocks for Transition to Discipline, 23 blocks for Foundations, 43 blocks for Core and 13 blocks for Transition to Practice.

One block is equal to four weeks.

This document is to be reviewed by the Specialty Committee in Cardiac Surgery by December 2027.

APPROVED – Specialty Standards Review Committee – October 2017

REVISED (content related to Surgical Foundations only) – Specialty Committee in Cardiac Surgery and the Office of Standards and Assessment – July 2024

APPROVED – Office of Standards and Assessment (as delegated by the Specialty Standards Review Committee) – July 2024