UBC Cardiac Critical Care Fellowship

The UBC Cardiac Critical Care Fellowship is a comprehensive 12-month clinical and academic training program designed to prepare cardiologists for specialized practice in the Cardiac Intensive Care Unit. Based at St. Paul's Hospital, Vancouver General Hospital and Royal Columbian Hospital this fellowship provides advanced, specialized training in managing critically ill cardiac patients. It bridges the gap in standard critical care or cardiology residencies by delivering focused expertise in critically ill cardiovascular patients.

The program aligns with Critical Care competencies and incorporates CanMEDS principles throughout training.

This fellowship is affiliated with the UBC Division of Cardiology.

Program Overview

The UBC Cardiac Critical Care fellowship program provides advanced training in the comprehensive care of critically ill cardiac and cardiothoracic patients, equipping learners with the clinical expertise, procedural skills, and leadership capabilities required in a cardiovascular intensive care setting. Participants gain extensive experience in the management of patients recovering from routine and complex cardiac surgical procedures, including coronary artery bypass grafting (CABG), valve repair and replacement, and aortic surgery. The program emphasizes the assessment and treatment of severe cardiogenic shock, cardiac arrest, and multi-organ failure, while developing proficiency in the use and management of mechanical circulatory support technologies such as extracorporeal membrane oxygenation (ECMO), ventricular assist devices (VADs), and intra-aortic balloon pumps (IABPs).

In addition to advanced patient management, learners receive hands-on training in essential diagnostic and procedural techniques, including bedside transthoracic and transesophageal echocardiography (TTE and TEE), ultrasound-guided vascular access, arterial line placement, airway management, chest tube and cannulation care. Working within a highly collaborative multidisciplinary environment, participants partner with cardiac surgeons, cardiologists, cardiovascular anesthesiologists, perfusionists, and critical care specialists to deliver coordinated, evidence-based care. The program also fosters academic and professional development through participation in clinical research, quality improvement initiatives, academic teaching sessions, and morbidity and mortality rounds, preparing graduates for leadership roles in cardiovascular critical care.

Eligibility

Applicants must be certified, or eligible for certification, in Adult Cardiology through the Royal College of Physicians and Surgeons of Canada or possess equivalent specialist qualifications from their country of training. In accordance with UBC Postgraduate Medical Education (PGME) requirements, clinical fellows must have completed all specialty training and examination

requirements necessary to be recognized as a specialist in their home jurisdiction. https://postgrad.med.ubc.ca/prospective-trainees/postgraduate-fellows/

Training Environment

The fellowship is delivered across three affiliated UBC adult tertiary care sites: Vancouver General Hospital (VGH), St. Paul's Hospital (SPH), and Royal Columbian Hospital (RCH). Together, these sites provide fellows with exposure to a high volume and broad case mix of critically ill cardiac and cardiac surgical patients.

These sites are home to the Centre for Cardiac Critical Care, which integrates patient care, quality improvement, and clinical research focused on patients with acute cardiac conditions. The Centre has a longstanding history of leadership in multicentre clinical trials, as well as in clinical outcomes, through large provincial and international registries.

Educational Curriculum

The Program Director oversees the fellowship curriculum and monitors trainee progress through regular assessments and monthly meetings. Fellows actively participate in:

Planned Rotations

Rotation	Blocks
General Systems ICU	**4**
Cardiovascular Surgical ICU	**2**
Anesthesia	**1**
Advanced Heart Failure/Transplant/VAD	**1**
CICU	**1**
Research	**1**
Elective	**1**
Selective	**1**
Vacation | Conference Leave	**1**

Learning Objectives by Rotation

Rotation-specific objectives are organized around the CanMEDS competency framework (Medical Expert, Leader, Communicator, Health Advocate, Scholar, Professional and Collaborator), in keeping with guidance from the Canadian CICU Directors Working Group and allied national critical care and cardiology societies.

General Systems ICU (4 blocks)

Fellows build a broad general-ICU skill set, developing fluency in the assessment and management of shock and non-cardiac respiratory failure, and in multi-organ support technologies such as continuous renal replacement therapy, mechanical ventilation and vasoactive therapy. Core procedural skills include central and arterial line insertion, endotracheal intubation, bronchoscopy, chest tube management and point-of-care ultrasonography. Fellows also lead interprofessional rounds, communicate effectively with patients and families (including goals-of-care and end-of-life discussions), and contribute to the teaching of junior learners.

Cardiovascular Surgical ICU (2 blocks)

Fellows manage the postoperative course of cardiac surgical patients, including CABG, valve and aortic procedures, with particular attention to bleeding, tamponade and hemodynamic instability. Training includes indications, complications and management of mechanical circulatory support (IABP, ECMO) and participation in circulatory-support triage. Procedural skills include pulmonary artery catheter placement, temporary pacing, electrical cardioversion and leadership of the resuscitation team, including emergency re-sternotomy, during post-surgical cardiac arrest.

Anesthesia (1 block)

Fellows strengthen perioperative and airway management skills, including preoperative risk assessment and anesthetic planning; familiarity with anesthesia equipment and pharmacology; and advanced airway management techniques, such as direct and video laryngoscopy and supraglottic airway devices. Training emphasizes the application of these skills to support hemodynamic and respiratory optimization in the perioperative setting.

Substitution: The Anesthesia block may be replaced with a Elective if equivalent Anesthesia training was completed during recent cardiology residency.

Advanced Heart Failure / Transplant / VAD (1 block)
Fellows deepen their understanding of acute and chronic heart failure management, the indications, complications and troubleshooting of temporary and durable mechanical circulatory support devices, and the principles of transplant candidacy. The rotation also builds skill in palliative and goals-of-care conversations for patients with advanced heart failure, integrating hemodynamic and point-of-care echocardiographic data into management decisions.

CICU (1 block)

Functioning as junior attending, fellows lead daily rounds in the Cardiac Intensive Care Unit and manage acute cardiac conditions such as acute coronary syndromes, decompensated heart failure, tamponade, severe arrhythmia, pulmonary embolism and pulmonary hypertension. They integrate invasive hemodynamic and point-of-care echocardiographic findings into clinical

decision-making and participate in triage of transfers and bed management alongside the CICU attending.

Across all rotations, fellows are expected to demonstrate professionalism and sound ethical practice (informed consent, advance directives, patient autonomy), collaborate effectively within the multidisciplinary critical care team, and contribute to the education of junior trainees and allied health colleagues.

Evaluation incorporates quarterly feedback from faculty members, allied health professionals, and clinical supervisors, with ongoing emphasis on clinical competence, professionalism, communication skills, and academic development.

Selective (1 block)

Fellows may select one of the following rotations as electives:

- VGH Cardiac Intensive Care Unit (CICU)
- Advanced Heart Failure/Ventricular Assist Device (VAD)

Elective (1 block)

Fellows may select one of the following rotations based on their training goals and areas of interest:

- Cardiac Anesthesia
- VGH CICU
- Advanced Heart Failure
- Echo
- Other

Research, Scholarship and Quality Improvement

Scholarly activity is an important component of the fellowship. Fellows are expected to complete a scholarly project under the supervision of faculty mentors, which may include clinical research, quality improvement initiatives, educational scholarship, program evaluation, or other academically relevant work. Responsibilities may include:

- Identifying a clinically relevant question or area for improvement
- Conducting literature reviews and evidence appraisal
- Designing and implementing a research, quality improvement, or scholarly project
- Data collection, analysis, and interpretation
- Development of quality improvement interventions and outcome evaluation, where applicable
- Preparation of abstracts, presentations, reports, or manuscripts
- Presentation of findings at local, national, or international academic forums

- Dissemination of results through publication, quality improvement reports, or other scholarly outputs

Competency-Based Training

Training objectives are structured according to the CanMEDS framework.

Appointment and Evaluation

A three-month probationary period applies at the start of training. Continuation beyond this period depends on satisfactory performance, availability of funding, and compliance with University of British Columbia policies and agreements. Reappointment remains at the discretion of the University and is based on performance evaluations, available resources, and professional conduct.

Application Information

The UBC Cardiac Critical Care academic year runs from July through June, and applications are valid only for the academic year to which they are submitted; applications are not carried forward to subsequent years.

Prospective applicants must follow UBC PGME Clinical Fellowship application procedures, credential verification documents, and licensing requirements. Please visit our UBC PGME website to review general guidelines: https://postgrad.med.ubc.ca/prospective-trainees/postgraduate-fellows/

Our program requires, a letter of intent, current CV, and three (3) references directly submitted to Dr. Kaila and address to the selection committee.

The general application deadline is: January 1 for all International Medical Graduates (IMG) and January 1 to February 28 for Canadian Medical Graduates (CMG) the year prior to the program start date.

Gulf-State applicants must submit complete applications through their sponsoring agencies to PGME at least six weeks before the application deadline. https://postgrad.med.ubc.ca/prospective-trainees/postgraduate-fellows/

The UBC Cardiac Critical Care Fellowship offers a unique opportunity for cardiologists to develop advanced expertise in critical care cardiology through integrated clinical training, multidisciplinary collaboration, scholarly activity, and leadership development. Graduates emerge prepared to provide specialized critical care in Cardiology to work in a Cardiac Intensive Care Unit.

Fellows will be fully integrated into the ICU team, assuming a leadership role in daily bedside rounds and participating in the assessment, management, and longitudinal care of critically ill patients. In addition, fellows will engage in experiences like those undertaken by Royal College Critical Care Medicine residents. Faculty will provide mentorship and guidance to support the development and advancement of each fellow's scientific, academic, and clinical career goals.