ROYAL COLLEGE
OF PHYSICIANS AND SURGEONS OF CANADA
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DES MÉDECINS ET CHIRURGIENS DU CANADA

# Pediatric Critical Care Medicine Training Experiences

**2024**
**VERSION 3.0**

*These training requirements apply to those who begin training on or after July 1, 2024.*

## ELIGIBILITY REQUIREMENTS TO BEGIN TRAINING

There are three routes of entry into Pediatric Critical Care Medicine:

1. Royal College certification in Anesthesiology, Cardiac Surgery, Emergency Medicine, or General Surgery, or enrolment in a Royal College approved training program in one of these areas (see requirements for these qualifications). Three years of one of these primary specialties must be completed prior to entry into the Pediatric Critical Care Medicine training.

**OR**

2. Royal College certification in Pediatrics **OR** satisfactory completion of all four stages of Royal College training in Pediatrics **OR** satisfactory completion of Transition to Discipline, Foundations of Discipline, and Core of Discipline and progressing as expected in Transition to Practice of Royal College training in Pediatrics.

**OR**

3. Entrance from other specialties may occur but must follow completion of the primary specialty training, which must have included a minimum of
   - Three months in a general medical/surgical intensive care unit (ICU)
   - Three months of pediatric clinical rotations

## ELIGIBILITY REQUIREMENTS FOR EXAMINATION[1]

All candidates must be Royal College certified in their primary specialty in order to be eligible to write the Royal College examination in Pediatric Critical Care Medicine.

[1] These eligibility requirements are not applicable to Subspecialty Examination Affiliate Program (SEAP) candidates. Please contact the Royal College for information about SEAP.

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The following training experiences are required, recommended, or optional, as indicated:

## TRANSITION TO DISCIPLINE (TTD)

*The purpose of this stage is to verify achievement of the competencies of primary specialty training, particularly pertaining to confirmation of basic procedural skills, provision of advanced life support, and initiation of resuscitation. This stage also provides an orientation to the Pediatric Critical Care Medicine residency program, including the hospital system, and specifically the ICU. In this stage, residents begin a longitudinal wellness curriculum aimed to make them aware of the expectations and stresses associated with Critical Care Medicine practice, in recognition that burnout and psychological distress are common within Pediatric Critical Care Medicine learners and faculty.*

**Required training experiences (TTD stage):**

1. Clinical training experiences:
   - 1.1. ICU, including daytime and after-hours coverage (see Note)

2. Other training experiences:
   - 2.1. Pediatric Advanced Life Support (PALS) or equivalent
   - 2.2. Orientation to the postgraduate office, hospital and the ICU, including policies, resident resources, admitting and discharge processes, and information systems
   - 2.3. Orientation to the program, including policies, resident resources, program portfolios, learning resources, and assessment systems
   - 2.4. Formal instruction in patient safety issues (e.g., handover, infection prevention and control, recognizing and reporting adverse events)
   - 2.5. Orientation to physician wellness resources
   - 2.6. Formal instruction in basic procedures, including
     - 2.6.1. Bag-mask ventilation
     - 2.6.2. Chest compressions
     - 2.6.3. Defibrillation
     - 2.6.4. Intraosseous placement
     - 2.6.5. Ultrasound for vascular access

**Recommended training experiences (TTD stage):**

3. Clinical training experiences:
   - 3.1. Shadowing respiratory technicians, nurses and other health care providers to learn about their roles and responsibilities within the interprofessional team

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4. Other training experiences:
   4.1. Advanced trauma life support (ATLS) training or equivalent
   4.2. Simulation-based education, including procedural skills, communication, and team training (i.e., crisis resource management)
   4.3. Join a specialty specific professional organization

**Optional training experiences (TTD stage):**

5. Clinical training experiences:
   5.1. Any clinical service related to Pediatric Critical Care Medicine

6. Other training experiences:
   6.1. Initiation of a research, continuous quality improvement, or other scholarly activity

## FOUNDATIONS OF DISCIPLINE (F)

*In this stage, residents evaluate and manage common ICU conditions, including patients requiring routine mechanical ventilation/respiratory support, advanced trauma life support, and resuscitation. They perform common procedural skills and form an initial diagnosis and management plan for uncomplicated patients, as well as those in shock or organ failure. By the end of this stage, residents have demonstrated the ability to identify and care for end-of-life needs of both patients and their families.*[2]

**Required training experiences (Foundations stage):**

1. Clinical training experiences:
   1.1. ICU, including daytime and after-hours coverage (see Note)
   1.2. Shadowing dieticians, pharmacists, social workers, and spiritual care workers to learn their roles and responsibilities within the interprofessional team

2. Other training experiences:
   2.1. ATLS or equivalent, Trauma Resuscitation in Kids (TRIK) or equivalent, or pediatric-specific trauma course
   2.2. Simulation-based education, including procedural skills, communication, and team training (i.e., crisis resource management)

[2] Throughout this document, references to the patient's family are intended to include all those who are personally significant to the patient and are concerned with their care, including, according to the patient's circumstances, family members, partners, caregivers, legal guardians, and substitute decision-makers.

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2.3. Formal instruction in
   2.3.1. Issues pertaining to social determinants of health
   2.3.2. Research methodology and the conduct of scholarly activity

2.4. Initiation of a research, continuous quality improvement, or other scholarly activity

**Recommended training experiences (Foundations stage):**

3. Clinical training experiences:
   3.1. Anesthesiology for airway management
   3.2. Any clinical service related to defined learning needs based on primary specialty and individual competencies

4. Other training experiences:
   4.1. Formal instruction in learning and teaching

**Optional training experiences (Foundations stage):**

5. Other training experiences:
   5.1. Attendance at Canadian Critical Care Trials Group or critical care-focused meeting

## CORE OF DISCIPLINE (C)

*In this stage, residents build on the Pediatric Critical Care Medicine approach in patients with greater complexity of illness, including managing critically ill patients who may have respiratory failure, shock, or multisystem organ dysfunction. Residents perform advanced ICU procedural skills. They manage end-of-life care and organ donation as well as the transport of critically ill patients. This stage also focuses on communicating with patients and families in complicated situations. Residents participate in scholarly activities, including self-directed personal and professional development as well as teaching and coaching junior learners.*

**Required training experiences (Core stage):**

1. Clinical training experiences:
   1.1. ICU, including daytime and after-hours coverage (see Note)
   1.2. Clinical services related to defined learning needs based on primary specialty training and individual competencies

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2. Other training experiences:
    2.1. Training in
        2.1.1. Continuous renal replacement therapy (clinical or simulation training acceptable)
        2.1.2. Extracorporeal life support, including both venoarterial and venovenous
        2.1.3. Neurological determination of death, donation after circulatory death, and management of the organ donor
        2.1.4. Point-of-care ultrasound for diagnosis of pericardial effusion, cardiac ventricular size and function, vascular volume status, pleural effusion, pneumothorax, and ascites
    2.2. Simulation-based education, including procedural skills, communication, and team training (i.e., crisis resource management)
    2.3. Continued participation in scholarly activity
    2.4. Teaching, supervision, and assessment of learners
    2.5. Formal instruction in equity, diversity, and inclusion, including
        2.5.1. Anti-oppression
        2.5.2. Anti-racism
        2.5.3. Cultural humility
        2.5.4. Implicit bias

**Recommended training experiences (Core stage):**

3. Other training experiences:
    3.1. Presentation at formal or grand rounds
    3.2. Presentation at quality assurance rounds
    3.3. Provision of interprofessional teaching to nurses, respiratory therapists, and other health care providers
    3.4. Attendance at a specialty-specific conference

**Optional training experiences (Core stage):**

4. Other training experiences:
    4.1. Participation in continuous quality improvement and patient safety initiatives
    4.2. Provision of teaching for the general public on topics relevant to critical illness (e.g., participation in health advocacy presentation for the general public)
    4.3. Participation in leadership training
    4.4. Completion of Crucial Conversations or similar course

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## TRANSITION TO PRACTICE (TTP)

*The focus of this stage is the demonstration of leadership in the ICU, which involves coordinating the triage, management, and delivery of care to patients who are critically ill, including collaboration with the interprofessional health care team. Residents use clinical judgement and discretion to lead interprofessional conferences, family meetings, discussions on ethical dilemmas, and debriefings on resuscitations and other critical events. This stage also focuses on preparation for the non-clinical aspects of practice management with formal instruction in areas of administrative and professional responsibility, including certification and the development of plans for lifelong learning and professional development.*

**Required training experiences (TTP stage):**

1. Clinical training experiences:
    - 1.1. ICU, including daytime and after-hours coverage (see Note)
        - 1.1.1. ICU associated call coverage aligned with a junior attending[3] model
        - 1.1.2. Leading family meetings and interprofessional patient conferences

2. Other training experiences:
    - 2.1. Formal instruction in practice management. Topics include
        - 2.1.1. Billing
        - 2.1.2. Continuing medical education
        - 2.1.3. Contract negotiation
        - 2.1.4. Licensure
        - 2.1.5. Provincial and territorial regulatory authority standards and policies
    - 2.2. Participation in ICU administration and management, e.g., allocation of limited resources, participation in resource allocation committees, and ICU policy development
    - 2.3. Presentation of a completed scholarly or CQI project

**Recommended training experiences (TTP stage):**

3. Clinical training experiences:
    - 3.1. Clinical services related to defined learning needs based on primary specialty training and individual competencies, as well as career goals

[3] "Junior attending" means that the resident assumes responsibility for patient care, and leadership in the education and clinical supervision of junior colleagues, with as much independence as permitted by ability, law, and hospital policy.

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## CERTIFICATION REQUIREMENTS

Royal College certification in Critical Care Medicine requires all of the following:

1. Royal College certification in Anesthesiology, Cardiac Surgery, Emergency Medicine, General Surgery, Pediatrics, or other primary specialty where the entry criteria have been achieved;

2. Successful completion of the Royal College examination in Pediatric Critical Care Medicine; and

3. Successful completion of the Pediatric Critical Care Medicine Portfolio.

## NOTES

The Pediatric Critical Care Medicine 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.

The clinical experiences in the ICU are intended to provide experience in the full range and complexity of conditions relevant to Pediatric Critical Care Medicine during the totality of the residency. Therefore, this must include experience with all of the following pediatric patient populations: cardiac (surgical and medical), neurological (surgical and medical), trauma, and medical and surgical patients who require ICU treatment. An individual resident’s sequence of and emphasis on these different patient populations will vary based on the competencies achieved in their primary specialty, as well as their distinct interests and career goals.

## ALTERNATE ROUTES TO CERTIFICATION

There are three routes to training in Pediatric Critical Care Medicine: sequential training, integrated training, and accelerated training. Please note that an individual Pediatric Critical Care Medicine program may offer one or more of these training routes.

### Sequential training

Sequential training refers to the scenario in which a resident completes all requirements for certification in the primary specialty before entry into subspecialty residency, and subsequently follows the typical route to certification in the subspecialty.

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**Accelerated training in Pediatric Critical Care Medicine following completion of the certification requirements in a primary specialty**

Individuals who are eligible for certification in a primary specialty may be eligible for an accelerated course of training leading to certification in Pediatric Critical Care Medicine, based on the achievement of competencies relevant to Pediatric Critical Care Medicine in their primary specialty. Assessments of the achievement of relevant competencies will be made on an individual basis by the accepting Pediatric Critical Care medicine program and its postgraduate medical education office, following the principles of the Royal College Credentials policy.

Guidance for residents and programs regarding accelerated training in Pediatric Critical Care Medicine

1. Relevant professional activities and training experiences during the primary specialty will be reviewed on an individual basis by the accepting critical care medicine program and its postgraduate medical education office and may be credited towards achievement of competence in Pediatric Critical Care Medicine.[4]
2. Transition to Discipline in the critical care medicine program may be used to verify and document achievement of Foundations and selected Core EPAs of Pediatric Critical Care Medicine and to create an individualized curriculum.

**Integrated training in Anesthesiology and Pediatric Critical Care Medicine, applying either the conjoint or discretionary model of overlap training[5] in Competence by Design**

Residents who are "progressing as expected" or whose "progress is accelerated" in the Core stage of Anesthesiology training are eligible to undergo integrated training to complete the Core and Transition to Practice stages in Anesthesiology concurrent with training in Pediatric Critical Care Medicine.

In this route to certification, both the Anesthesiology and Pediatric Critical Care Medicine program will have oversight and responsibility for determining the resident's training experiences and learning plan. In addition, the Competence Committees of the respective program will each be responsible for review of and recommendations for the resident's progress through the training requirements of that discipline.

Guidance for residents and programs regarding integrated training in Anesthesiology and Pediatric Critical Care Medicine

1. It is strongly recommended that early in their Anesthesiology residency, individuals who intend to pursue an integrated training route in Pediatric Critical Care Medicine contact their program director in Anesthesiology to declare their intention and discuss how to

[4] *Overlap between Anesthesiology and Critical Care Medicine_2020-09-16*; document available by request from specialtycommittees@royalcollege.ca.
[5] See *The application of 'Overlap in Training' in Competence by Design*.

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structure their training and application to Pediatric Critical Care Medicine.

2. It is expected that the period of integrated training will occur during the PGY4 and PGY5 years, with completion of the requirements of certification (including examination) in Anesthesiology by the end of PGY5. The PGY6 year will be focused on completion of Pediatric Critical Care Medicine training experiences and certification requirements.

3. The Specialty Committees in Anesthesiology and Critical Care Medicine have identified that there are entrustable professional activities (EPAs) of Pediatric Critical Care Medicine at the Transition to Discipline stage that will have been achieved in Anesthesiology training prior to the resident's entry into the Pediatric Critical Care Medicine program.[4]

4. The Specialty Committees in Anesthesiology and Critical Care Medicine have identified that there are EPAs in both disciplines which are substantively equivalent, and that achievement of that EPA in one discipline may be applied by the other discipline's Competence Committee in their review of the resident's progress.

5. The Specialty Committees in Anesthesiology and Critical Care Medicine have identified that there is significant overlap, but not full equivalency, in a number of other training experiences and EPAs. Observations documented for the EPAs of one discipline may be reviewed by the Competence Committee of the other discipline and applied towards the case mix and performance requirements of that discipline.

6. It is required that the Competence Committees in Anesthesiology and Pediatric Critical Care Medicine both have access to the resident's assessment data in order to make individual determinations of progress on a shared data set.

## MODEL DURATION OF TRAINING

Progress in training occurs through demonstration of competence and advancement through the stages of the Competence Continuum. Pediatric Critical Care Medicine is planned as a two-year residency program. There is no mandated period of training in each stage. Individual duration of training may be influenced by many factors, which may include the student's singular progression through the stages and overlap training, the availability of teaching and learning resources, and differences in program implementation. Duration of training in each stage is therefore at the discretion of the Faculty of Medicine, the Competence Committee, and the program director.

Guidance for programs:

The Royal College Specialty Committee in Critical Care Medicine's suggested course of training, for the purposes of planning learning experiences and schedules, is as follows:

- Two blocks in Transition to Discipline
- Six to seven blocks in Foundations of Discipline
- Thirteen to fourteen blocks in Core of Discipline
- Four blocks in Transition to Practice

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The 26 blocks (24 months) include at least 13 blocks of clinical Pediatric Critical Care Medicine and no more than six blocks dedicated to one specific focused area (e.g., clinical training, research/scholarly activity, etc.). The remaining blocks should be other clinical care experiences related to critical care medicine.

*This document is to be reviewed by the Specialty Committee in Critical Care Medicine by December 2026.*

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