

KidSONO – ROTATION DESCRIPTION AND EXPECTATIONS (RDE)
Pediatric Emergency Medicine Subspecialty Residency - University of Calgary

ROTATION DESCRIPTION

Rotation structure

All PEM residents are expected to achieve CanPoCUS Independent Practitioner Certification if not already achieved during residency. Given the challenges pediatric-stream residents may encounter in obtaining this certification, an alternative path is available to master PoCUS through the completion of relevant KidSONO modules followed by having scans signed off by a PoCUS mentor. To assist with the completion of these modules, residents without prior CanPoCUS IP certification will participate in KidSONO and Point-of-Care Ultrasound (PoCUS) activities longitudinally throughout the two years of subspecialty residency. They will also be given 2 weeks of dedicated time to focus on the completion of the KidSono modules.

Scan Requirements

- 50 FAST abdomen
- 50 cardiac
- 20 pneumonia/pulmonary edema
- 10 pneumothorax
- 10 femoral nerve identification
- 10 ultrasound guided procedures
 - 8 can be on phantoms
 - 2 must be on patients
- 10 skin/soft tissue

How to achieve these scans:

- On shift, aim for 1-2 scans per shift.
- Participate in Scan-o-ramas (hands-on image acquisition sessions) twice a year.
- On PEM, select a shift with a PoCUS mentor to get more direct observation.
- Join image review sessions during academic half days, three times per year.
- Practice ultrasound guided procedures during PoCUS academic half day.
- Practice on phantom blocks that are left in the ED Doctor's office for self-study.
- Seek ultrasound guided procedures during Adult EM rotations where there may be a higher volume of procedures.

Residents will be given two weeks of dedicated time in residency to focus on completing these scans. This is typically combined with the two-week radiology rotation making a Radiology/Kidsono 4 week rotation. During the 4 weeks, the residents have the flexibility to:

- Complete ImageSim modules
- Complete KidSONO Modules
- Schedule scanning shifts with PoCUS mentors
- Review scans with KidSONO PoCUS mentors

Longitudinal PoCUS Shifts

PoCUS learning opportunities will be integrated longitudinally throughout the year via dedicated PoCUS-enhanced clinical shifts. Residents will be expected to select one shift per month with a PoCUS-trained preceptor. The primary goal is to use PoCUS as a tool to complement and inform real-time clinical care and decision-making. These are not scanning-only shifts; residents will continue to provide full clinical care while incorporating PoCUS as appropriate. During these shifts, residents are encouraged to identify patients in the ED where PoCUS may add diagnostic value—such as cases involving abdominal trauma, chest pain, abscesses, or suspected pneumonia.

Rotation length

Residents will be given two weeks of dedicated time in their residency to focus on completing the above scans and getting POCUS immersion. Vacation requests will follow the PEM Vacation and Education and Leave Policy.

(https://docs.google.com/document/d/1pQddx9VLT74sny263koOMLAg_MWns9Au/edit?usp=sharing&oid=100114742872973660072&rtpof=true&sd=true).

Assessment

- Log all scans in the KidSONO app to get them signed off.
- Fulfill 10 EPAs in PoCUS (Core EPA 9 Performing an interpreting point-of-care ultrasound to guide patient management) over the 2 years.
- This rotation will be assessed at the end of the 2 year subspecialty residency. An ITAR will be sent to the KidSONO Educational Lead for completion.

EPAs

The following EPAs have been mapped to this rotation and can be obtained:

**Refers to EPAs that must be prioritized on this rotation, very likely to occur*

FOD	4	Communicating with Patients and Families About Assessment Findings and Management Plans
FOD	5	Working Effectively with Other Members of the Interprofessional Team
*CORE	9	Performing and Interpreting Point-Of-Care Ultrasound to Guide Patient Management
CORE	11	Managing Emotionally Charged Interactions with Patients, Families and/or Other Health Care Professionals
CORE	12	Coordinating Care with Other Services
CORE	13	Providing Clinical Teaching and Supervision
TTP	4	Managing Test Results Received After a Patient Has Left the ED

ROTATION EXPECTATIONS (PEM Competencies 2023)

At the completion of training, the resident will have acquired the following competencies and will function effectively as:

Medical Expert

1. Practise medicine within their defined scope of practice and expertise

1.1. Demonstrate a commitment to high-quality care of their patients

- 1.2. Integrate the CanMEDS Intrinsic Roles into their practice of Pediatric Emergency Medicine
- 1.3. Apply knowledge of the clinical and biomedical sciences relevant to Pediatric Emergency Medicine
 - 1.3.2. Anatomy, physiology, and pathophysiology as related to clinical presentations in Pediatric Emergency Medicine
 - 1.3.2.1. Anatomy of the internal organs and the musculoskeletal and neurologic systems, including surface anatomy and sonoanatomy, to guide diagnostic and therapeutic procedures
 - 1.3.2.2. Physiology and pathophysiology as it applies to the cardiovascular, pulmonary, gastrointestinal and hepatobiliary, genitourinary, gynecologic, endocrine, neurological, musculoskeletal, hematologic, immunologic and integumentary systems, including pregnancy
 - 1.3.6. Principles of investigation and testing
 - 1.3.6.1. Minimization of pain and distress
 - 1.3.6.2. Diagnostic imaging modalities and their indications, contraindications, and risks
 - 1.3.6.3. Cumulative radiation dose and the application of the ALARA (as low as reasonably achievable) principle
 - 1.3.6.4. Indications for and methods of sedation and immobilization
 - 1.3.6.5. Utility, applications, and limitations of point-of-care ultrasound (POCUS)
2. Perform a patient-centred clinical assessment and establish a management plan
- 2.2. Elicit a history, perform a physical exam, select appropriate investigations, and interpret their results for the purpose of diagnosis and management, disease prevention, and health promotion
 - 2.2.9. Select investigations with attention to diagnostic utility, safety, availability, and cost
 - 2.2.11. Interpret the following investigations
 - 2.2.11.2. Medical imaging, including
 - 2.2.11.2.1. Radiographs
 - 2.2.11.2.1.1. Abdominal
 - 2.2.11.2.1.2. Chest
 - 2.2.11.2.1.3. Skull
 - 2.2.11.2.1.4. Spine and extremity
 - 2.2.11.2.2. Critical findings of
 - 2.2.11.2.2.1. Abdominal/pelvic computed tomography (CT) and ultrasound
 - 2.2.11.2.2.2. Chest CT
 - 2.2.11.2.2.3. Cranial CT
 - 2.2.11.2.2.4. Imaging done as a part of a trauma protocol
 - 2.2.11.2.3. POCUS examinations

- 2.2.12. Use sound clinical reasoning and judgment to guide diagnostic and management decisions, including in circumstances where complete clinical or diagnostic information is not immediately available
- 2.2.13. Recognize and mitigate the risk of over-investigation and over-diagnosis
- 3. Plan and perform procedures and therapies for the purpose of assessment and/or management
- 3.4. Perform procedures in a skilful and safe manner, adapting to unanticipated findings or changing clinical circumstances
 - 3.4.4. POCUS examinations
 - 3.4.4.1. Identification of
 - 3.4.4.1.1. Abdominal or pelvic free fluid
 - 3.4.4.1.2. Cardiac standstill
 - 3.4.4.1.3. Hemothorax or pleural effusion
 - 3.4.4.1.4. Pericardial effusion
 - 3.4.4.1.5. Pneumothorax
 - 3.4.4.1.6. Soft tissue fluid collection or foreign body
 - 3.4.4.2. Facilitation of
 - 3.4.4.2.1. Fracture reduction
 - 3.4.4.2.2. Nerve block
 - 3.4.4.2.3. Vascular access
- 4. Establish plans for ongoing care and, when appropriate, timely consultation
- 4.1. Implement a patient-centred care plan that supports ongoing care, follow-up on investigations, response to treatment, and further consultation
 - 4.1.6. Provide follow-up for diagnostic test results that become available after a patient's discharge from the emergency department

For Communicator, Collaborator, Leader, Health Advocate, Scholar, Professional competencies, please review the appropriate section of the Pediatric Emergency Medicine Competencies document at: <https://www.royalcollege.ca/content/dam/documents/ibd/pediatric-emergency-medicine/pem-competencies-e.pdf>