

Pediatric Interventional Radiology Fellowship - Goals and Objectives

DEFINITION OF PEDIATRIC INTERVENTIONAL RADIOLOGY

Pediatric interventional radiology is the medical imaging subspecialty in which minimally invasive image-guided techniques are used for both diagnosis and therapy in infants and children. It involves expertise in diagnostic imaging, radiation safety, image-guided minimally invasive procedures and techniques, and evaluation and management of patients who can benefit from these interventions.

TRAINING YEAR SPECIFIC OBJECTIVES

1) Medical Expert:

- 1.1) Describe human anatomy and basic sciences as applied to pediatric interventional radiology.
- 1.2) Operate basic radiographic equipment in an angiographic suite: digital imaging, advanced fluoroangiographic techniques, fluoroscopy, ultrasound and computed tomography (CT). Operate a vascular contrast injector and vascular pressure monitoring. Describe magnetic resonance (MR) imaging techniques and MR imaging safety applied to MR imaging-guided interventions.
- 1.3) Show diagnostic and interpretative skills relevant to interventional radiology.
- 1.4) Define the importance of maintaining patient well-being during interventional procedures and the specific requirements for infants and children.
 - 1.4.1) Analgesia, fluid balance and body temperature maintenance.
 - 1.4.2) Monitoring devices including pulse oximetry and ECG.
 - 1.4.3) Usage of face mask oxygen and airway suction.
- 1.5) Perform common interventional procedures in children:
 - 1.5.1) Describe interventional hardware such as catheters, wires, tubes, devices – names and sizes, etc.
 - 1.5.2) Perform pre-procedure scrubbing techniques, aseptic techniques, self-protection against needle injury and unnecessary exposure to body fluids.
 - 1.5.3) Insert, remove and maintain all vascular access and enterostomy access devices.
 - 1.5.4) Operate ultrasound, CT and fluoroscopy for image-guided drainage and biopsy.
- 1.6. Consult with patients, families and other health care professionals.
- 1.7. Manage patients undergoing an interventional procedure.
 - 1.7.1) Describe the pre-procedural requirements (bloodwork, fasting and the need for collaboration with other services prior to procedures).

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- 1.7.2) Follow hospital guidelines regarding patient sedation for interventional procedures.
- 1.7.3) Manage allergic reactions.
- 1.8. Define adequate imaging assessment prior to certain interventional procedures including mapping ultrasounds and use of recent imaging rather than basing procedures on older examinations.
- 1.9. Assess a patient (clinical history, physical exam, imaging studies) and design a treatment plan in the Vascular Anomalies clinic.
- 1.10. Present cases at rounds (e.g. teaching rounds, city-wide rounds, journal club, etc.).

2. Communicator:

- 2.1. Communicate effectively with patients and families and other health care professionals.
- 2.2. Obtain informed consent which includes discussion with patient and family about procedures, expected outcomes and risks, and generally answering patient and family questions.
- 2.3. Communicate findings of procedures and their outcome in a timely fashion with responsible physicians and services.
- 2.4. Generate adequate written reports and records.

3. Collaborator:

- 3.1. Collaborate with referring physicians, colleagues and other health care professionals.
- 3.2. Function as a team member with other members of the department including radiologists, nurses and technologists.
- 3.3. Effectively participate in combined cases, especially with surgical specialties.

4. Manager:

- 4.1. Describe effective resource utilization in medical imaging.
- 4.2. Assess safety issues and economic considerations in pediatric interventional radiology.

5. Health Advocate:

- 5.1. List the benefits and risks of medical imaging investigations as pertaining to pediatric interventional radiology.
- 5.2. Recognize situations in which imaging or intervention would be detrimental to the health/safety of the patient.
- 5.3. Describe all aspects of radiation safety, including protection and necessary precautions for patients and staff and how to minimize exposure of patients to ionizing radiation.

6. Scholar:

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- 6.1. Prepare a personal continuing education plan. This includes attendance and case presentation at rounds, reading educational and published work, attendance to courses and conferences and completion of PALS course.
- 6.2. Critically appraise the literature through case presentations in rounds and paper reviews at Journal Club.
- 6.3. Conduct a radiology research project, at least one research project per year of fellowship that must be completed and a draft submitted to Medical Imaging, University of Toronto, before the end of the training.
- 6.4. Present at bi-annual departmental research rounds organized by Diagnostic Imaging Research Director.
- 6.5. Teach medical students, residents and observers.

7. Professional:

- 7.1. Show ethical practice, sensitivity to gender/culture diversity, enthusiasm, motivation, good behaviour (honesty, integrity and compassion), good work habits (punctual, organization in work, adequate speed of work and responsibility).
- 7.2. Show awareness of strengths and weaknesses.
- 7.3. Show acceptance of constructive criticism.

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