

CORE SKILLS**RADIOGRAPHIC INTERPRETATION****INTRODUCTION**

Radiographic studies are commonly performed throughout a wide range of pediatric healthcare settings. Imaging can play a pivotal role in the acute and chronic medical and surgical management of ill children. The explosion of imaging technology and expertise in the past three decades has resulted in an increased array of imaging modalities from which to choose. Access to and interpretation of imaging studies for children varies greatly between facilities. Pediatric hospitalists frequently encounter patients requiring imaging studies, and should be adept at ordering and interpreting images in collaboration with radiologist and other subspecialists.

KNOWLEDGE

Pediatric hospitalists should be able to:

- Review basic human anatomy and relate this to interpretation of common plain radiographs of areas such as the chest, abdomen, airway, and long bones.
- Describe the indications and limitations of the common radiographic modalities such as sonography, computed tomography, magnetic resonance imaging, plain radiography, and bone scans.
- Describe the risks of ionizing radiation in children and review the concept of ALARA (as low as reasonably achievable) in limiting radiation exposure.
- Review the indications for and benefits and risks of oral and intravenous contrast.
- Review the indications for anxiolysis, sedation, and anaesthesia attending to age, developmental stage, and procedure being performed.
- Compare and contrast indications for interventional radiologist versus general surgical consultation.
- Discuss the role of the radiologist as consultant.
- Discuss the appropriate imaging modality selection(s) for common emergent clinical presentations such as altered mental status, stridor, potential bowel obstruction, and others.
- Compare and contrast the utility, risks, and costs of different imaging modalities for presentations of complicated pneumonia and acute abdominal pain.

SKILLS

Pediatric hospitalists should be able to:

- Correctly determine the optimal study to answer a specific clinical question in a cost-effective manner, accounting for the limitations and risks of the study.
- Accurately order radiologic studies, noting indications for the study, sedation/anaesthesia need, and other relevant information in the order.
- Engage the radiologist as consultant as appropriate.
- Accurately interpret plain radiographs of the chest and abdomen for children 0-18 years of age.
- Correctly identify the need for and efficiently access interventional radiologists as appropriate.
- Communicate effectively with the healthcare team including radiologist and anaesthesiologist (as appropriate) to ensure safe, efficient and effective performance of radiologic studies.
- Correctly interpret and apply the results of radiographic studies into clinical care plans.

ATTITUDES

Pediatric hospitalists should be able to:

- Elicit and allay common family/caregiver concerns regarding radiation risks.
- Work collaboratively with hospital staff, radiologists, and anaesthesiologists to ensure coordinated planning and performance of radiologic studies.
- Communicate effectively with patients and the family/caregiver regarding the indications for, risks, benefits, and steps involved in the radiologic procedure.
- Recognize the importance of obtaining results of all studies and reviewing images in person whenever possible.

CORE SKILLS

SYSTEMS ORGANIZATION AND IMPROVEMENT

In order to improve efficiency and quality within their organizations, pediatric hospitalists should:

- Lead, coordinate or participate in the development and implementation of cost-effective, safe, evidence-based standards for radiology services for children.
- Work with hospital administration to assure that a reliable and efficient radiographic imaging service is available for pediatric inpatients at the local facility.
- Lead, coordinate or participate in development and implementation of a system to review the accuracy of readings for pediatric patients and develop local criteria for tertiary referral center consultation.
- Collaborate with hospital administration and community partners to develop and sustain referral networks between local facilities and tertiary referral centers that enable review of appropriately selected pediatric images.
- Work with hospital administration, subspecialists, and others to review acquisition of new technologies and assess the impact on patient care.

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