

Elective Specialty Rotation: Pediatric Radiology at KCHC/UHB or SIUH

Residents: Pediatric Residents at the PL1, PL2, PL3 level

Prerequisites: Experience with pediatric patients in the inpatient or outpatient setting.

Primary Goals for this Rotation

GOAL: Normal vs. Abnormal. Differentiate normal from abnormal features on radiographs.

1 : Examine radiographs in a systematic manner.

2 : Interpret radiographs accurately, recognizing the characteristic patterns by which physiologic and morphologic alterations are demonstrated.

3 : Differentiate common normal variants and developmental features from pathologic conditions on plain radiographs.

GOAL: Interpreting Common Radiographs. Order and interpret radiographic studies in common and emergency conditions.

1 : Request the radiographic study needed to clarify a clinical problem.

2 : Communicate key patient information related to the radiographic study to the radiologist.

3 : Manage patients effectively using radiographic information.

4 : Interpret common findings on radiographs accurately. For example, identify the following features on commonly obtained radiographs:

1. Abdominal radiographs: abdominal masses, free intraperitoneal air, ileus, intestinal obstruction, pneumatosis intestinalis, intraperitoneal and retroperitoneal calcifications
2. Chest radiographs: atelectasis, airspace and interstitial pulmonary disease, cardiomegaly, foreign bodies, abnormalities of lung volume, pneumothorax, pleural fluid, masses, abnormal pulmonary vasculature
3. Extremity radiographs: bone tumors, cysts, bone destruction, common fractures [Salter-Harris classification], common dislocations, osteomyelitis, arthritis, soft tissue swelling, foreign body
4. Lateral neck radiographs: adenoidal and tonsillar hypertrophy, epiglottic and glottic edema, foreign body, retropharyngeal abscess, subglottic narrowing, cervical spine abnormalities
5. Sinus radiographs: mucosal thickening, masses, air-fluid levels, bone destruction
6. Spine radiographs: vertebral dislocation and fracture, vertebral destruction, collapsed vertebra, disc space disease, segmentation

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anomalies, scoliosis

5 : Develop a basic level of proficiency in identifying common abnormalities in these radiographic studies that pediatricians order in emergent or urgent situations:

1. Skeletal survey for suspected non-accidental trauma
2. Computer tomography of the head

GOAL: Advanced Imaging. Use appropriate imaging modalities in the diagnosis and management of pediatric patients.

1 : Counsel families and patients regarding the basic indications for and risks associated with specialized imaging such as the following:

1. Computed tomography (CT)
2. Contrast imaging: cystourethrography, barium esophagram, upper gastrointestinal series, small bowel follow through, contrast enema
3. Ultrasound
4. Nuclear medicine : Positron emission tomography (PET), Single photon emission computed tomography (SPECT)
5. Magnetic resonance imaging (MRI)

2 : Use radiology consultation effectively for design of workup and diagnosis; provide key patient information to the radiologist and follow up as needed.

3 : Consult the radiologist for interventional procedures where appropriate, such as:

1. Vascular intervention
2. Venous intervention (central venous lines, peripherally inserted lines, peripheral and central ports)
3. Vascular embolization
4. Abscess drainage
5. Percutaneous biopsies
6. Gastrostomy, gastrojejunostomy and cecostomy
7. Tracheal and esophageal intervention (esophageal dilatation, tracheobronchial stents)
8. Renal and hepatobiliary intervention (drainage catheters, stents)

4 : Recognize the most suitable imaging study for evaluation of various disease conditions.

5 : Conduct timely and appropriate follow-up of fetal ultrasonographic abnormalities.

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GOAL: Pediatric Competencies in Brief. Demonstrate high standards of professional competence while working with patients under the care of a subspecialist.

Competency 1: Patient Care. Provide family-centered patient care that is development- and age-appropriate, compassionate, and effective for the treatment of health problems and the promotion of health.

1 :Use a logical and appropriate clinical approach to the care of patients presenting for specialty care, applying principles of evidence-based decision-making and problem-solving.

2 :Describe general indications for subspecialty procedures and interpret results for families.

3 :Know the risks and benefits of the use of varying imaging modalities including that of exposure to radiation and the life-long risk of cancer.

Competency 2: Medical Knowledge. Understand the scope of established and evolving biomedical, clinical, epidemiological and social-behavioral knowledge needed by a pediatrician; demonstrate the ability to acquire, critically interpret and apply this knowledge in patient care.

1 :Acquire, interpret and apply the knowledge appropriate for the generalist regarding the core content of this subspecialty area.

2 :Critically evaluate current medical information and scientific evidence related to this subspecialty area and modify your knowledge base accordingly.

Competency 3: Interpersonal Skills and Communication. Demonstrate interpersonal and communication skills that result in information exchange and partnering with patients, their families and professional associates.

1 :Communicate effectively with primary care and other physicians, other health professionals, and health-related agencies to create and sustain information exchange and teamwork for patient care.

2 :Maintain accurate, legible, timely and legally appropriate medical records, including referral forms and letters, for patients in the outpatient and inpatient setting.

3 :Understand the technique and interpretation of imaging study reports.

Competency 4: Practice-based Learning and Improvement. Demonstrate knowledge, skills and attitudes needed for continuous self-assessment, using scientific methods and evidence to investigate, evaluate, and improve one's

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<p>patient care practice.</p>
<p>1 :Identify standardized guidelines for diagnosis, evaluation and treatment of conditions referred to this subspecialty area and adjust to the needs of specific patients.</p>
<p>2 :Identify personal learning needs related to this subspecialty; systematically organize relevant information resources for future reference; and plan for continuing acquisition of knowledge and skills.</p>
<p>Competency 5: Professionalism. Demonstrate a commitment to carrying out professional responsibilities, adherence to ethical principles, and sensitivity to diversity.</p>
<p>1 :Demonstrate personal accountability to the well-being of patients (e.g., following up on lab results, writing comprehensive notes, and seeking answers to patient care questions).</p>
<p>2 :Demonstrate a commitment to carrying out professional responsibilities.</p>
<p>3 :Adhere to ethical and legal principles, and be sensitive to diversity.</p>
<p>Competency 6: Systems-based Practice. Understand how to practice high-quality health care and advocate for patients within the context of the health care system.</p>
<p>1 :Identify key aspects of health care systems as they apply to specialty care, including the referral process, and differentiate between consultation and referral.</p>
<p>2 :Demonstrate sensitivity to the costs of clinical care in this subspecialty setting, and take steps to minimize costs without compromising quality</p>
<p>3 :Recognize and advocate for families who need assistance to deal with systems complexities, such as the referral process, lack of insurance, multiple medication refills, multiple appointments with long transport times, or inconvenient hours of service.</p>
<p>4 :Recognize one's limits and those of the system; take steps to avoid medical errors.</p>
<p>Procedures</p>
<p>GOAL: Diagnostic and screening procedures. Describe the following tests or procedures, including how they work and when they should be used; competently perform those commonly</p>

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used by pediatricians.

Radiologic interpretation: abdominal ultrasound

Radiologic interpretation: abdominal X-ray

Radiologic interpretation: cervical spine X-ray

Radiologic interpretation: chest X-ray

Radiologic interpretation: cranial US

Radiologic interpretation: CT of head

Radiologic interpretation: extremity X-ray

Radiologic interpretation: GI contrast study

Radiologic interpretation: lateral neck X-ray

Radiologic interpretation: MRI of head

Radiologic interpretation: nuclear medicine GI scanning

Radiologic interpretation: renal ultrasound

Radiologic interpretation: skeletal X-ray (incl. abuse)

Radiologic interpretation: skull film for fracture

Radiologic interpretation: sinus films

Radiologic interpretation: voiding cystourethrogram

Source

Adapted from Kittredge, D., Baldwin, C. D., Bar-on, M. E., Beach, P. S., Trimm, R. F. (Eds.). (2004). APA Educational Guidelines for Pediatric Residency. Ambulatory Pediatric Association Website.