CanMeds Goals & Objectives-MCH

1) Pediatric Rotation

Description

The pediatric radiology rotation includes a period of 4 weeks as PGY 3 and a period of 12 weeks as PGY 4:

PGY 3:	2 weeks in ultrasound,
	1 week in Chest
	1 week in MSK
PGY 4:	2 weeks in Chest,
	2 weeks in MSK,
	3 weeks in neuro,
	3 weeks in GU-GI,
	2 weeks in ultrasound,

General Goal

By the end of these two rotations, the resident should be competent in standard pediatric diagnosis including plain film radiography, common GI and GU contrast studies, ultrasound, CT and MRI.

the resident should develop an understanding for paediatric-specific pathologies and be able to review images for children ranging from extreme premature infants to adolescents.

children.

Perform and interpret ultrasound studies and gain experience with paediatric-specific exams such as hip, brain, and pyloric stenosis US.

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2) Pediatric Chest

PGY 3: One week.
PGY 4: Two weeks

Goals Overview

By the end of the residency training, the resident should be competent in interpreting radiographs, CT and MR of pediatric chest disease at the level of a general consulting radiologist. This should include:

Radiographs of neonatal chest disease
Radiographs and special studies of older children
Radiographs, CT and MR of congenital heart disease (in combination with the dedicated cardiac rotation).

Specific Objectives

Medical Expert (PGY3)

To learn the special attention given to the effects of ionizing radiation in immature proliferating and differentiating tissue in pediatrics and its importance in guiding investigation of chest diseases
To demonstrate knowledge of common pathologies and their radiographic features:
Neonatology:

- Normal premature and full-term anatomy, in particular the variant thymic appearances; common ICU support devices: normal and potentially dangerous positioning
- Umbilical arterial catheter [between T6 and T10 or at L3-4]
- Umbilical venous catheter
- VA, VV ECMO
- Common neonatal pulmonary diseases
  -RDS, PIE, TTN, BPD, Meconium aspiration, pneumothorax, pneumomediastinum, diaphragmatic hernia/eventration, persistent pulmonary hypertension
- Learning to separate medical from surgical conditions

Infants and older children:

- To become proficient in interpreting radiographs of upper and lower respiratory acute infections/inflammation which are the majority of examinations in pediatric radiology (pneumonia [round pneumonia < 7 years; TB], croup, and epiglottitis, bronchiolitis, reactive airways disease, Cystic Fibrosis)
- Investigation of upper airway obstruction and suspected foreign body aspiration
- To learn the usefulness of sonography and CT in evaluating chest infection (US for effusion, CT for parenchymal perfusion)
- Mediastinal and chest wall masses
  Anterior (Lymphoma, Germ cell tumors [aortic, thyroid, thymoma are rare in pediatric]
  Middle (Adenopathy, Non-neoplastic)
  Posterior (Neural crest tumors, Nerve sheath tumors)

Medical Expert (PGY4)

Same as PGY 3 plus:

Neonatology:

Assessment of heart size and pulmonary vascularity

-Congenital heart disease with decreased pulmonary blood flow (right to left shunt) (Tetralogy of, Ebstein anomaly, Tricuspid atresia)

-Cyanotic congenital heart disease with increased pulmonary blood flow (left to right shunt) (Truncus arteriosus, Transposition of the great vessels, Single ventricle, TAPVR, AV canal

-Acyanotic congenital heart disease with increased pulmonary blood flow (ASD, VSD, PDA, AV canal)

-Congenital heart disease with pulmonary venous congestion or normal pulmonary blood flow (Coartation, Aortic stenosis, Mitral Stenosis, Interrupted aortic arch, Cor triatriatum, Pulmonary venous stenosis)

-Hypoplastic left heart

Professional

To demonstrate integrity, honesty and compassion.
To practice with an understanding of the ethical and medical-legal requirements of radiologists.
To demonstrate an awareness of own limitations.

Scholar

To set personal learning goals during each rotation.
To take a leadership role in the teaching/supervision of junior radiology residents, elective medical students and off-service residents (when appropriate).

Responsibilities

Clincal

Interpret all chest radiographs from patients seen in the emergency department since 5 pm the previous day; review with supervisor and be certain appropriate prompt notification occurs of missed important findings or incorrect diagnoses (PGY3 & PGY 4).
Interpret all thoracic medical imaging performed during the previous 24 hours on

communicate, when necessary, with the clinician (PGY 3 & PGY 4).
Interpret, review and report chest films from emergency room, clinics, wards and consultations from referring institutions (PGY 3 & PGY 4).
Protocol and interpret all thoracic CT scans after reviewing previous studies and, when necessary, discussing the indication and appropriate study with the supervisor and/or clinician (PGY 4)
Observe and participate in thoracic sonography if time permiBT/F4 166gu15PGY 4).

Suggested Resources

Pediatric Imaging: The Fundamentals. Donnelly 2009.

Kidneys (UPJ obstruction, Duplication, Multicystic dysplastic kidney, Agenesis, Ectopia, Cross-fused ectopia, VACTRL association, ARPCK, ADPKD, Syndromes [Tuberous sclerosis, von-Hippel Lindau, Zellweger, Meckel-Gruber], Pyelonephritis, Reflux nephropathy, Wilms tumor, Nephroblastomatosis, Mesoblastic nephroma, Multilocular cystic nephroma, Leukemia/lymphoma, Renal vein thrombosis, Urolithiasis, Renal transplant US, Renovascular hypertension)
Adrenal Glands (Neuroblastoma, Adrenocortical carcinoma, Neonatal hemorrhage, Congenital adrenal hyperplasia)
Bladder, Ureters, Urethra (Posterior urethral valves. Ureterovesical junction obstruction, Primary megaureter, Bladder diverticula, Ureteral duplication, Ureterocele, Urachal abnormalities, Hypospadias, Epispadias, Bladder exstrophy, Prune belly, Rhabdomyosarcoma, VU reflux, Neurogenic bladder, Dysfunctional voiding including bladder/sphincter dyssynergia)
Male Genital Tract (Testicular torsion, Torsion of testicular or epididymal appendages, Hydrocele, Epididymitis/orchitis, Germ cell tumors, Stromal tumors, Leukemia, rhabdomyosarcoma)
Female Genital Tract (Vaginal occlusion (imperforate hymen), Fusion anomalies of the Mullerian ducts (uterus didelphys, bicornuate uterus Cloacal anomalies, Ovarian Torsion, Ovarian cysts, Germ cell tumors, Rhabdomyosarcoma (uterus or vagina), Intersex states)

Communicator

To dictate well-organized reports, including relevant findings, diagnosis and recommendations.
To demonstrate effective communication skills when dealing with patients, staff and referring physicians.

Collaborator

To demonstrate good consulting skills when interacting with other physicians and health team members.
To interact appropriately with other radiology department staff, demonstrating a team approach to patient care.

Manager

To demonstrate awareness of the indications for various gastrointestinal genitourinary and computerized tomography examinations.
To consider advantages and disadvantages of fluoroscopic studies and CT vs other imaging modalities.
To consider available imaging resources when planning and recommending patient care, using them effectively and efficiently.

Health Advocate

To demonstrate awareness of radiation issues and radiation doses related to fluoroscopic studies (GI/GU studies) and computerized studies, particularly in the pediatric population.
Recognize and understand issues related to exams performed in all ages, including newborn babies, infants, toddlers, children and adolescents, since interaction with the

Professional

To demonstrate integrity, honesty and compassion.
To practice understanding ethical and medical-legal requirements of radiologists.
To demonstrate awareness of own limitations and seek consult.

Scholar

To set personal learning goals and objectives during rotation.
To take a leadership role in the learning of others, with teaching/supervision of junior residents on rotation, elective students, off-service residents.

Rotation Responsibilities

Clinical

The residents should focus on learning basic GI/GU techniques and skills. Residents should also review all CT cases as well.
With graded responsibility, residents should by the end of the rotation interpret routine fluoroscopic studies under supervision, perform contrast examinations by himself under the supervision of the assigned radiologist. Attention should be paid to emergent examinations (upper GI for volvulus, intussusception reduction, and water-soluble neonatal enema).

Rounds:

Residents should attend weekly radiology/surgery/pathology and monthly GI rounds.

Evaluation

Evaluation is on a daily basis by staff radiologist assigned to GI/GU and computerized tomography, as well as staff at daily educational rounds.

Quantitative expectations

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4) Pediatric Ultrasound

PGY 3: two week
PGY 4: two week

Goals Overview

At the end of the residency training, the resident should be competent in ultrasound skills required for general Pediatric Ultrasound

Collaborator:

To demonstrate good consulting skills when interacting with other physicians and health team members.
To interact appropriately with other radiology department staff, demonstrating a team approach to patient care.

Manager:

To demonstrate awareness of the indications for the variety of sonographic examinations performed in children.
To consider advantages and disadvantages of sonographic studies versus other imaging modalities.
To consider available imaging resources when planning and recommending patient care, using them effectively and efficiently.

Health Advocate:

Recognize and understand issues related to exams performed in all ages, including newborn babies, infants, toddlers, children and adolescents, since interaction with the patients and parents vary accordin for obvious reasons.

Professional:

To demonstrate integrity, honesty and compassion.
To practice understanding ethical and medical-legal requirements of radiologists.

Quantitative expectations

PGY 3: 4-5 US/day
PGY 4: 8-10 US/day

Suggested resources:

Recommended text books:
Siegel - Pediatric Sonography, 4rd edition 2010
Kirks -

Collaborator

To demonstrate good consulting skills when interacting with other physicians and health team members.
To interact appropriately with other medical imaging department staff and demonstrate a team approach to patient care.

Manager

To demonstrate awareness for the increased radiosensitivity to ionizing radiation in growing children and plan follow-up studies, repeat examinations and further investigations accordingly.
To consider available resources when planning patient care, considering prioritizing special examinations, staffing of the department, cost-

Health Advocate

To recognize and consider consent issues, disclosure of test results, patient comfort, risk of examination.

Professional

To demonstrate integrity, honesty and compassion.
To practice with an understanding of the ethical and medical-legal requirements of radiologists.
To demonstrate an awareness of own limitations.

Scholar

To set personal learning goals during rotation.
To take a leadership role in the teaching/supervision of junior radiology residents, elective medical students and off-service residents (when appropriate).

Rotation responsibilities

Clinical

Interpret all MSK radiographs from patients seen in the emergency department, review

Quantitative expectations

Radiographs : 40 cases/day (PGY 3 & PGY 4)
CT, MRI : 2-4 cases/day (PGY 4)

Suggested resources

Pediatric Imaging: The Fundamentals. Donnelly 2009.

Keats; Atlas of normal roentgen variants that may simulate diseases
Swischuk Imaging of the Cervical spine in children

6) Neuroradiology Rotation

PGY 4: 3 weeks

Goals and Overview

By the end of the residency training, the resident should be competent in interpreting radiographs, CT and MR of the central nervous system, neck and face, ears and eyes.

Specific Objectives