

## Pediatric Radiology Fellow Rotation in General Pediatric Radiology

**Note: This is my re-write of the older version that I have posted, just to give an example of how Goals and Objectives might evolve.**

Rotation Description: The fellow spends time assigned to fluoroscopy, plain films, and cross-sectional body imaging, usually on a daily basis, paired with an attending. The fellow learns to perform all procedures with the attending, assuming the larger role as the attending steps back. The fellow is expected to preliminarily read all studies, then go over the reports with the attending before sign-off. Diagnostic Radiology residents rotate through the division; the fellow may occasionally be asked to help supervise them but will not generally share a service with them. The division also accepts pediatric residents and medical students for elective rotations as observers, and these individuals also form a part of the educational experience. Attendance at Midday conferences (case and didactic) is expected; the fellow and residents will share the “hot seat”. Morning clinical rounds (NICU, PICU and Emergency Department) are attended and eventually conducted by the fellow.

Duration: 8.5 months, distributed through the year.

### Competency Definitions, with Competency-Based Goals and Objectives

**Patient Care—The fellow will provide patient care through safe, efficient, appropriately utilized, quality-controlled diagnostic and/or interventional radiology techniques and effectively communicate results to the referring physician and/or other appropriate individuals in a timely manner (from the ACGME Notable Practices/Radiology-Diagnostic/Assessment System).** In this program, the fellow will plan and perform radiologic procedures skillfully, with attention to patient well-being while minimizing radiation dose; determine appropriateness of imaging procedures and efficiently integrate them into the patient’s ongoing clinical care through consultation and coordination with other caregivers.

#### Rotation-specific Educational Goals related to this Competency

The fellow will learn and be able to practice:

Competent management of patients in the fluoroscopy suite (including positioning, restraint, dose reduction through coning and shielding, attention to temperature, oxygenation and hydration) through faculty-supervised graduated assumption of responsibility

Best performance of fluoroscopy examinations (GI, GU and respiratory tracts)

Best performance of ultrasound examinations (chest, abdomen, pelvis)

Ability to perform sonography as well as critique sonographer-obtained images) utilizing gray-scale and duplex Doppler

Best performance of CT examinations (chest, abdomen, pelvis) with most efficacious use of IV and oral contrast, prevention and management of IV contrast reactions

Best performance of Body MR examinations with most appropriate protocoling and use of IV and oral contrast as well as management of sedation and recovery.

#### Graduated Training Objectives and their Evaluative Measurement:

By the end of the **first quarter**, the fellow will:

Complete fluoroscopy checklists for upper GI and VCUg

Demonstrate knowledge of iodinated IV contrast risks and reaction management by completing the self-study module and quiz

Score as “Competent” or Above Competence” on the relevant questions in the Faculty Quarterly Evaluation

By the end of the **second quarter**, the fellow will:

Complete checklists for male and female urethral catheterization

Complete ultrasound checklists for renal and abdominal ultrasound

Demonstrate knowledge of gadolinium IV contrast risk and reaction management by completing the self-study module and quiz

Score as “Competent” or Above Competence” on the relevant questions in the Faculty Quarterly Evaluation

Score as “Competent” or Above Competence” on the relevant questions in the Nurses' Semiannual Evaluation

Score as “Competent” or Above Competence” on the relevant questions in the Technologists' Semiannual Evaluation

By the end of the **third quarter**, the fellow will:

Complete fluoroscopy checklists for contrast enema, modified barium swallow

Complete ultrasound checklist for hypertrophic pyloric stenosis

Demonstrate knowledge of sedation procedures by completing the self-study module and quiz

Score as “Competent” or Above Competence” on the relevant questions in the Faculty Quarterly Evaluation

By the end of the **fourth quarter**, the fellow will:

Complete ultrasound checklists for scrotal ultrasound

Score as “Competent” or Above Competence” on the relevant questions in the Faculty Quarterly Evaluation

Score as “Competent” or Above Competence” on the relevant questions in the Nurses' Semiannual Evaluation

Score as “Competent” or Above Competence” on the relevant questions in the Technologists' Semiannual Evaluation

**Medical Knowledge – Fellows will engage in continuous learning using up to date evidence and apply appropriate techniques to meet the imaging needs of patients, referring physicians and the health system (from the ACGME Notable Practices/Radiology-Diagnostic/Assessment System).** In this program, the fellow will attain a knowledge base of pediatric medical/surgical problems and related anatomy (Curriculum description: next pages); use it to recognize normal and abnormal radiologic findings and compose an age-appropriate differential diagnosis.

Rotation-specific Educational Goals related to this Competency:

Reliable recognition of normal and abnormal radiologic findings in musculoskeletal, GU, GI, respiratory and cardiovascular systems

Interpretation appropriately influenced by patient age, sex, prior imaging findings and coexisting medical problems

Composition of a reasonable differential diagnosis

Graduated Training Objectives and their Evaluative Measurement:

By the end of the **first quarter**, the fellow will:

Complete half of the modules in the Society for Pediatric Radiology on-line curriculum under Introduction, General Competencies, Cardiac, Chest, Esophagus and Airway, GI, GU, Musculoskeletal, Syndrome, and Systemic Conditions and submit certificates

Reliably recognize and describe pneumonia, GI obstruction, hydronephrosis, vesicoureteral reflux, fractures, misplaced lines and tubes as evidenced by decreasing errors in report read-out

Score as “Competent” or Above Competence” on the relevant questions in the Faculty Quarterly Evaluation

Score as “Competent” or Above Competence” on the relevant questions in the Teaching Evaluations  
Score as “Competent” or Above Competence” on the relevant questions in the Interdisciplinary  
Conference Evaluations

By the end of the **second quarter**, the fellow will:

Reliably recognize and describe surfactant deficiency disease, pulmonary edema, SCFE, DDH, malrotation, intussusception, testicular torsion, HPS as evidenced by decreasing errors in report read-out

Score as “Competent” or Above Competence” on the relevant questions in the Faculty Quarterly  
Evaluation

Complete the remainder of the modules in the Society for Pediatric Radiology on-line curriculum under Introduction, General Competencies, Cardiac, Chest, Esophagus and Airway, GI, GU, Musculoskeletal, Syndrome, and Systemic Conditions

Score as “Competent” or Above Competence” on the relevant questions in the Teaching Evaluations

Score as “Competent” or Above Competence” on the relevant questions in the Interdisciplinary  
Conference Evaluations

By the end of the **third quarter**, the fellow will:

Reliably recognize and describe Wilms tumor, neuroblastoma, inflammatory bowel disease, osteomyelitis as evidenced by decreasing errors in report read-out

Score as “Competent” or Above Competence” on the relevant questions in the Faculty Quarterly  
Evaluation

Score as “Competent” or Above Competence” on the relevant questions in the Teaching Evaluations

Score as “Competent” or Above Competence” on the relevant questions in the Interdisciplinary  
Conference Evaluations

By the end of the **fourth quarter**, the fellow will:

Reliably recognize and describe lymphoma, leukemia, osteosarcoma as evidenced by decreasing errors in report read-out

Score as “Competent” or Above Competence” on the relevant questions in the Faculty Quarterly  
Evaluation

Score as “Competent” or Above Competence” on the relevant questions in the Teaching Evaluations

Score as “Competent” or Above Competence” on the relevant questions in the Interdisciplinary  
Conference Evaluations

**Practice Based Learning and Improvement – Fellows will participate in evaluation of their personal practice utilizing scientific evidence, “best practices” and self-assessment programs in order to optimize patient care through lifelong learning (from the ACGME Notable Practices/Radiology-Diagnostic/Assessment System).** In this program, the fellow will critically evaluate current methods and published research to improve radiology practice; identify personal limits in knowledge and expertise, set learning and improvement goals, identify and perform appropriate learning activities, integrate evaluations and suggestions for change; participate in education of other health professionals as well as students, residents and families; show ability to be a self-motivated life-long learner.

Rotation-specific Educational Goals related to this Competency:

The fellow will learn and be able to show:

Recognition of sub-standard images and how to avoid them

How practice can be modified through a focused Quality Improvement Project

How personal attitudes and practice can be modified through reflection on feedback offered by 270 degree evaluations.

Graduated Training Objectives and their Evaluative Measurement:

By the end of the **first quarter**, the fellow will:

Critique fluoroscopy time, radiographic image quality and sonographic image quality on studies performed for fluoroscopy and ultrasound checklists

Score as “Competent” or Above Competence” on the relevant questions in the Faculty Quarterly Evaluation

By the end of the **second quarter**, the fellow will:

Critique fluoroscopy time, radiographic image quality and sonographic image quality on studies performed for fluoroscopy and ultrasound checklists

Reflect on feedback from evaluations and use it to develop a Learning Plan for the remaining two quarters to be discussed at the mid-year Evaluation meeting with the Director

Have chosen and designed a Quality Improvement Project and discussed it with a faculty mentor

Score as “Competent” or Above Competence” on the relevant questions in the Faculty Quarterly Evaluation

By the end of the **third quarter**, the fellow will:

Critique fluoroscopy time, radiographic image quality and sonographic image quality on studies performed for fluoroscopy and ultrasound checklists

Score as “Competent” or Above Competence” on the relevant questions in the Faculty Quarterly Evaluation

By the end of the **fourth quarter**, the fellow will:

Carry out the Quality Improvement Project to the satisfaction of the faculty mentor and present it at a division noon conference

Critique fluoroscopy time, radiographic image quality and sonographic image quality on studies performed for fluoroscopy and ultrasound checklists

Review the Mid-Year Learning Plan and determine if it was fulfilled

Score as “Competent” or Above Competence” on the relevant questions in the Faculty Quarterly Evaluation

**Interpersonal and Communication Skills – Fellows will communicate effectively with patients, colleagues, referring physicians and other members of the health care team concerning imaging appropriateness, informed consent, safety issues and results of imaging tests or procedures (from the ACGME Notable Practices/Radiology-Diagnostic/Assessment System).** In this program, the fellow will communicate effectively with mentors, radiology and clinical colleagues, co-workers and patients and families verbally, by telephone, and through written reports to insure understanding of all aspects of the fellow’s radiology practice; develop skills in teaching to convey knowledge to colleagues and students through observation, instructional resources and practice.

Rotation-specific Educational Goals related to this Competency:

The fellow will learn and be able to show:

Concise and accurate radiologic reports

Facility with clinical rounds and telephone consults

Lucid discussion of clinical material in conferences and assigned presentations

Ability to talk with patients and families to secure cooperation and informed consent.

Graduated Training Objectives and their Evaluative Measurement:

By the end of the **first quarter**, the fellow will:

Show no more than 3 minor and 2 major errors on the Quarterly Written Report Review

Score as “Competent” or Above Competence” on the relevant questions in the Faculty Quarterly Evaluation

Score as “Competent” or Above Competence” on the relevant questions in the Teaching Evaluations  
Score as “Competent” or Above Competence” on the relevant questions in the Interdisciplinary  
Conference Evaluations

By the end of the **second quarter**, the fellow will:

Show no more than 2 minor and 1 major errors on the Quarterly Written Report Review

Score as “Competent” or Above Competence” on the relevant questions in the Faculty Quarterly  
Evaluation

Score as “Competent” or Above Competence” on the relevant questions in the Nurses' Semiannual  
Evaluation

Score as “Competent” or Above Competence” on the relevant questions in the Technologists'  
Semiannual Evaluation

Score as “Competent” or Above Competence” on the relevant questions in the Teaching Evaluations

Score as “Competent” or Above Competence” on the relevant questions in the Interdisciplinary  
Conference Evaluations

By the end of the **third quarter**, the fellow will:

Show no more than 1 minor and 1 major errors on the Quarterly Written Report Review

Score as “Competent” or Above Competence” on the relevant questions in the Faculty Quarterly  
Evaluation

Score as “Competent” or Above Competence” on the relevant questions in the Teaching Evaluations

Score as “Competent” or Above Competence” on the relevant questions in the Interdisciplinary  
Conference Evaluations

By the end of the **fourth quarter**, the fellow will:

Show no more than 1 minor and no major errors on the Quarterly Written Report Review

Score as “Competent” or Above Competence” on the relevant questions in the Faculty Quarterly  
Evaluation

Score as “Competent” or Above Competence” on the relevant questions in the Nurses' Semiannual  
Evaluation

Score as “Competent” or Above Competence” on the relevant questions in the Technologists'  
Semiannual Evaluation

Score as “Competent” or Above Competence” on the relevant questions in the Teaching Evaluations

Score as “Competent” or Above Competence” on the relevant questions in the Interdisciplinary  
Conference Evaluations

**Professionalism – Fellows will commit to high standards of professional conduct, demonstrating altruism, compassion, honesty and integrity; following principles of ethics and confidentiality; considering religious, ethnic, gender, educational and other differences in interacting with patients and other members of the health care team (from the ACGME Notable Practices/Radiology-Diagnostic/Assessment System).** In this program, the fellow will project a competent, concerned, compassionate professional image; respect diversity; exercise collegiality; demonstrate a commitment to life-long learning.

Rotation-specific Educational Goals related to this Competency:

The fellow will share these values with the faculty:

Dedication to the highest standards of performance

Promoting collegial atmosphere with ancillary professionals

Protecting patient confidentiality

Graduated Training Objectives and their Evaluative Measurement:

By the end of the **first quarter**, the fellow will:

Score as “Competent” or Above Competence” on the relevant questions in the Faculty Quarterly

## Evaluation

Score as “Competent” or Above Competence” on the relevant questions in the Teaching Evaluations

Score as “Competent” or Above Competence” on the relevant questions in the Interdisciplinary Conference Evaluations

By the end of the **second quarter**, the fellow will:

Score as “Competent” or Above Competence” on the relevant questions in the Faculty Quarterly Evaluation

Score as “Competent” or Above Competence” on the relevant questions in the Nurses' Semiannual Evaluation

Score as “Competent” or Above Competence” on the relevant questions in the Technologists' Semiannual Evaluation

Score as “Competent” or Above Competence” on the relevant questions in the Teaching Evaluations

Score as “Competent” or Above Competence” on the relevant questions in the Interdisciplinary Conference Evaluations

By the end of the **third quarter**, the fellow will:

Score as “Competent” or Above Competence” on the relevant questions in the Faculty Quarterly Evaluation

Score as “Competent” or Above Competence” on the relevant questions in the Teaching Evaluations

Score as “Competent” or Above Competence” on the relevant questions in the Interdisciplinary Conference Evaluations

By the end of the **fourth quarter**, the fellow will:

Score as “Competent” or Above Competence” on the relevant questions in the Faculty Quarterly Evaluation

Score as “Competent” or Above Competence” on the relevant questions in the Nurses' Semiannual Evaluation

Score as “Competent” or Above Competence” on the relevant questions in the Technologists' Semiannual Evaluation

Score as “Competent” or Above Competence” on the relevant questions in the Teaching Evaluations

Score as “Competent” or Above Competence” on the relevant questions in the Interdisciplinary Conference Evaluations

**System-Based Practice – Fellows will understand how the components of the local and national healthcare system function interdependently and how changes to improve the system involve group and individual efforts. Fellows will optimize patient care within their own practice and within the healthcare system. Fellows will consult with other healthcare professionals, and educate healthcare consumers, regarding the most appropriate utilization of imaging resources (from the ACGME Notable Practices/Radiology-Diagnostic/Assessment System).** In this program, the fellow will assimilate communications and archiving systems within the hospital (phones, paging, PACS, EPR, clinical service structure, HAL) to better coordinate patient care and act as part of the health care team; utilize other resources and ancillary professionals (such as nurse, radiographer, sonographer, information technologist and radiation physicist) to enhance patient care and safety; participate in identifying system errors and implementing potential systems solutions.

## Rotation-specific Educational Goals related to this Competency:

The fellow will learn and be able to show:

Ability to act as a consultant, integrating clinical and radiological findings to suggest best imaging algorithm

Ability to organize workflow for best balance of patient care demands and personnel resources

Knowledge of hospital systems (PACS, dictations system, paging system, telephones, personnel and

chain of command) in ways that expedite delivery of care  
Recognition of systems flaws that lead to errors, and how they could be ameliorated

Graduated Training Objectives and their Evaluative Measurement:

By the end of the **first quarter**, the fellow will:

Collect one clinical case in daily practice where a system flaw led to sub-optimal patient care; present the case at a divisional noon conference; document using the M&M form.

Score as “Competent” or Above Competence” on the relevant questions in the Faculty Quarterly Evaluation

By the end of the **second quarter**, the fellow will:

Collect one clinical case in daily practice where a system flaw led to sub-optimal patient care; present the case at a divisional noon conference; document using the M&M form.

Score as “Competent” or Above Competence” on the relevant questions in the Faculty Quarterly Evaluation

By the end of the **third quarter**, the fellow will:

Collect one clinical case in daily practice where a system flaw led to sub-optimal patient care; present the case at a divisional noon conference; document using the M&M form.

Score as “Competent” or Above Competence” on the relevant questions in the Faculty Quarterly Evaluation

By the end of the **fourth quarter**, the fellow will:

Collect one clinical case in daily practice where a system flaw led to sub-optimal patient care; present the case at a divisional noon conference; document using the M&M form.

Present the radiology findings at a Pediatric M&M Conference one time during the year, documented with the Interdisciplinary Conference Evaluation Form

Score as “Competent” or Above Competence” on the relevant questions in the Faculty Quarterly Evaluation

Supervising faculty member: Jane Benson MD

Other participating faculty: Thierry Huisman MD, Melissa Spevak MD, Renée Flax-Goldenberg MD, Aylin Tekes MD, Ulrich Willi MD.

Duty Hours per week: Division hours and call responsibility as outlined under Duty Hours. All studies accessioned by 5pm are read that day. Average hours: 50.

Estimated Faculty Contact Hours per week: 20

Educational Resources: Film-based teaching file in the reading room. Recent textbooks and journals in the office and reading room. Internet resources available through each workstation, including journal articles through PubMed (using the institutions’ comprehensive subscription portal), the SPR modules and RadPrimer (an interactive web-based teaching file). Dr. Paul Nagy in Radiology Clinical Operations is available as a faculty mentor for a Quality Improvement Project.