

**RESIDENT MANUAL
RADIOLOGY RESIDENT ROTATION
PEDIATRIC RADIOLOGY**

INTRODUCTION

Welcome to Pediatric Radiology at Arkansas Children's Hospital. We hope you learn lots of Pediatric Radiology, and that you enjoy the rotation as well. You will have the opportunity here to integrate the work-up and follow-up of patients. We read films together in one large reading room, in the fluoroscopy reading room and in the library. All studies performed on our patients come through these areas for interpretation. Therefore, all the radiologists have the opportunity to discuss a particular patient or problem, and have a chance to work as a team.

At ACH, we do "everything" including fluoroscopy, ultrasound, nuclear medicine, routine radiography, computed tomography, MRI, and interventional/vascular radiology. You will find this rotation most like private practice as the radiologists cover multiple areas. A written schedule with resident and fellow assignments for daily work is to be posted on the board by the end of the first day of the rotation. Usually, the senior resident or the pediatric radiology fellow assigned to Pediatric Radiology will have the responsibility for making out this schedule. Residents should always be assigned to the reading room and fluoroscopy. We will assign others to CT, MR and US. We will attempt to provide days in interventional radiology for 2nd-4th year residents.

The workday begins after morning conference and continues until the work is done.

SPECIFIC LEARNING OBJECTIVES

1. Learn how to relate to parents and children.
2. Learn how to perform basic pediatric fluoroscopic procedures, including barium swallow, esophageal swallowing studies, airway fluoroscopy, upper GI, voiding cystourethrograms, and contrast enemas.
3. Learn to perform and interpret pediatric ultrasound.
4. Interpretation of pediatric nuclear medicine.
5. Interpretation of pediatric computed tomography and MR.
6. Determine which radiographic procedures are best performed according to the clinical situation and depending on the age and symptomatology of the patient.

TEACHING ACTIVITIES

Listed below are regularly scheduled conferences:

Informative conferences you might enjoy attending as work schedule permits are underlined. In addition to the daily 1:00 pm conference at UAMS, separate conferences at Arkansas Children's Hospital are held as follows:

Monday

Ortho-Radiology Conference – 7:30 AM – Orthopedic Conference Room
Radiology Teaching Conference – 12:00 PM – Radiology Reading Room

Vascular Lesion Conference – 4:00 PM – 1st Monday of the month, Radiology Conference Room
Pediatric Tumor Board – 4:00 PM – 2nd and 4th Mondays – 2nd Floor Classroom

Tuesday

Pediatric Grand Rounds – 8:00 AM – Sturgis Auditorium

Wednesday

Radiology/Pediatric Neurosurgery Conference – 4:00 PM – Radiology Reading Room – CT Station
Radiology Teaching Conference – 12:00 PM – Radiology Reading Room

Thursday

Pediatric Neurology/Radiology Conference – 10:45 AM – Cardiology conference Room
Radiology Teaching Conference – 12:00 PM – Radiology Reading Room

SPECIFIC DUTIES AND RESPONSIBILITIES

1. All films must be reviewed with staff before a report is made. In general, we would like to follow the routine: residents review images, discuss them with staff and then residents dictate the films after they have been discussed. We use PACS and this process is easily accomplished without requiring additional time. We would suggest you try to review the films and make your own interpretations and impressions before you discuss them with the staff members. You will learn more from the films if you review them first.
2. Please make certain when you dictate to mention at the beginning of every examination, your own name and the name of the staff with whom you are dictating the case.
3. Daily work: We like to think of the staff and residents assigned to Pediatric Radiology as a team and we expect the residents to function very much as team players in:
 - Keeping the plain films reviewed and read
 - Promptly dictating ER films, promptly responding to overhead pages for phone pickup for a “radiologist on line _____”.
 - Acting as a consultant for the clinical services, i.e. being available until the work of the day is done
 - Returning promptly from morning and midday conferences
4. Interpretation of out-patient/ER/Teleradiology films:

Films are available on PACS. ER films are to be read preferentially all day. Voice clips of the opinions are placed on line to be available as soon as report is made, at each reading is a list of diagnoses which must be telephoned to persons taking care of the patient. This should be documented on the report. Any abnormal ER interpretations are to be noted on computer printout as well as being personally brought to the attention of the ER physician staffing the Emergency Room the next morning.

Films transmitted by teleradiology are viewed at the station in the reading room.

5. UAMS NICU films are read off a PACS unit identical to UAMS PACS units. These are read in the AM and throughout the day by the reading room staff. Resident assistance is appreciated.

6. Relationships with parents and children.

Each procedure should be explained to the child (if appropriate) and to the parents if they have come to radiology. Explain what the procedure is, and what risks might be involved to their child, and answer their questions. Occasionally, the results of the examination are explained to the parents after they have been reviewed with the staff.

7. Referring physicians in the city and state

Pediatricians in the city and the state refer patients to us on an out-patient basis. The results of these studies are often mailed and faxed to the private physicians; please make note of that in your dictation. Also, we usually call the physician's office with the results of the examination on the date it is performed.

8. Fluoroscopy

- Before beginning each fluoroscopic procedure, discuss the case with the staff before you start each examination. The staff will help you with any case and will probably do certain designated cases, particularly very sick or premature neonates. All old fluoro studies and in-patient charts should be reviewed so that the exam is tailored to the specific needs of the patient. The referring MD should be called if necessary.
- Always review with the staff specifically what you are going to do before beginning each fluoroscopic procedure, and always check with staff before patient leaves the department. If there is some question about fluoroscopy, we can usually go back and look over the examination on the videotape or re-examine the patient. Be sure images are reviewed at that time. After the case has been discussed, it should be dictated with the appropriate staff person's name.
- If fluoro time is longer than 5 minutes, a notation needs to be made in a book kept with each room explaining the unusual length of the procedure.
- If the patient is going to the clinic, the examination should be promptly dictated and available on PACS for the referring physician.

9. When on the Ultrasound rotation, we suggest you spend time with the technologist and watch scans being performed. Once comfortable, perform the scans yourself. You and the technologist can then review images with the staff in the reading room, who will discuss them with you and return to re-examine the patient if necessary, or allow to be dictated if the exam is adequate. The resident should also go with the technologist to the Intensive Care units, and the hospital floors when performing portable exams, to gain skill in performing head ultrasounds, and portable ultrasound procedures.

10. MRI/CT

The resident assigned to MRI/CT can preview the cases to be performed that day with the staff assigned to the rotation. This is done from 7:30-8:00 AM and the resident can come at this hour if there is no AM conference. Jointly, you can decide which sedation protocol to use, which techniques or pulse sequences to use to scan the patient, and answer any of the technologists' questions. When the scans are completed, they are reviewed on the MR or CT consoles before the patient is removed from the examining table. This way if additional sequences are necessary, they can be performed without disrupting sedation.

11. Routine plain films

When assigned to the reading room you can review the images on PACS. You will learn most by reviewing the images before discussing them with the staff person. The NICU/PICU and CVICU images are reviewed at the library reading station. Each resident should plan to spend 1-3 days each month on this rotation. By the end of your fourth year, you will be able to conduct these rounds with your staff "sitting in".

12. Call responsibilities

Call coverage is provided by a team consisting of a staff radiologist for general pediatric radiology, a staff radiologist for CT/MR backup, a staff radiologist for interventional procedures, and residents (one is the upper level in-house resident with another upper level "consult" resident as a back-up).

It is imperative that the correct names of the residents on call are posted in the technologist work area on the wall adjacent to the fluoroscopy room. It is the responsibility of the residents to call each afternoon to the fluoro area to inform them of the resident on call. It is the responsibility of the most senior resident present each day to assure the names are correctly posted.

Always call the appropriate on-call staff radiologist if you are requested to perform a fluoroscopic procedure or any interventional procedure. You may call about any other procedure in which you need assistance.

In a rare instance that staff does not respond to several pages or by telephone, call the other staff listed, or some other ACH staff until you find someone who can help.

13. Vacation Policy

It is policy that only one resident will be on vacation at any one time during the Pediatric Radiology rotation.

14. Sedation

Sedation in Pediatric patients requires some expertise. You will be instructed on your first day at Arkansas Children's Hospital in the protocols of various drugs which we use for pediatric sedation and will have the opportunity to

practice those skills during your rotation at ACH. Current ACLS certification is mandatory.

QUALITY IMPROVEMENT

ICD-9 Coding

Each study must be given 1-3 ICD-9 codes. You will be instructed in this. Please dictate the code at the end of each report on which it is required.

PEDIATRIC RADIOLOGY ROTATION – ACH Suggested Reading

Several general texts are highly recommended for this rotation in the following list, specific text are recommended for different years of training.

Year 1

1. John SD, Swischuk LE: Fundamentals of Diagnostic Radiology. Williams and Wilkins, 1994 (Brant and Helms)*
Section IX, Chapter 44 Pediatric Chest
Section IX, Chapter 45 Pediatric Abdomen and Pelvis
2. Kirks DR: Practical Pediatric Imaging: Diagnostic Radiology of Infants and Children, 3rd Edition, Lippincott-Raven, 1998.*
3. Hilton S, Edwards DK, Hilton JW. Practical Pediatric Radiology, WB Saunders Company, 1994.*
4. Harris JH, Jr., Edeiken-Monroe B. The Radiology of Acute Cervical spine Trauma, 3rd edition, Williams and Wilkins, 1996.
5. James CA, Seibert JJ, et al. Pediatric Radiology Case Base: The Baby Minnie of Pediatric Radiology. Thieme Medical Publishers, Inf., 1998.

Recommended reading during 1st 2 years

Schultz RJ: Language of Fractures, 2nd edition, Williams and Wilkins, 1990.

Kleinman PK: Diagnostic Imaging of Child Abuse. Williams and Wilkins, 1987.

Required reading year 1

Blickman H: Pediatric Radiology, The Requisites.

*Excellent references for more in depth reading years 1-4

Year 2-4

Teele R, Share J: Ultrasonography of Infants and Children. WB Saunders Company, 1991.**

Swischuk LE: Plain Film Interpretation in Pediatric Radiology. Lea and Febiger, 1970.**

Swischuk LE: Differential Diagnosis in Pediatric Radiology. Williams and Wilkins, 1986.**

Kirks DR: Practical Pediatric Imaging: Diagnostic Radiology of Infants and Children, 3rd Edition, Lippincott-Raven, 1998.**

ACR Syllabi on Pediatric Disease – highly recommended

#6, #19, #26 deal specifically with pediatrics

**Excellent references for selective topics

Year 4

Caffey J. Pediatric X-Ray Diagnosis. 10th edition, Mosby Company, 2004.
(section 3 – Skull, Spine and Central Nervous System pp. 319-762)

Reference Texts

Silverman FN, Kuhn JP: Caffey's Pediatric X-ray Diagnosis

Silverman FN, Kuhn JP: Essentials of Caffey's pediatric x-ray diagnosis.
Yearbook Medical Publishers, 1990

Sources available for Checkout while on the ACH rotation

Kirks DR: Practical Pediatric Imaging: Diagnostic Radiology of Infants and Children, 3rd Edition, Lippincott-Raven, 1998.

Caffey J. Pediatric X-ray Diagnosis, 10th Edition, Mosby Co., 2004

Sty JR, Donnelly LF, Frush DP. Pediatric Disease, 5th Series, Text and Syllabus, ACR Syllabus #48, 2002

James CJ, Seibert JJ: Pediatric Radiology: Teaching Atlas on CD-Rom

Pediatric Radiology Rotation – ACH Suggested Reading

A pediatric Radiology core curriculum (attached) has been devised by the ACH staff. We think the list represents topics with which you should be well familiar by the time you take boards. Some of these topics will be covered during the pediatric radiology conference, but it is your responsibility to supplement the conference material with dedicated reading.

You may check out certain books (as listed above) from Susan Rose at any time during the year. Many other pediatric texts are available, and the Pediatric Radiologists will be happy to suggest additional reading material as you desire.

SPR Pediatric Radiology Curriculum for Residents

Introduction

This curriculum in pediatric radiology is intended as a guideline for training diagnostic radiology residents rotating on pediatric radiology. The resident should have experience with all of the included modalities and clinical entities. It is recognized that it is impossible during a rotation to have hands-on experience with each clinical entity. Therefore, the residents should supplement actual clinical practice with teaching materials (including teaching files and independent reading) as well as conferences.

These guidelines are provided as a framework for the body of knowledge which we would expect a radiology resident to have as part of his/her pediatric radiology training.

More information is available at the Society for Pediatric Radiology's website, <http://www.pedrad.org>. For feedback or comments on this curriculum, email feedback@pedrad.org

Goals and Objectives
Pediatric Radiology
First Year Residents

Patient Care

Residents must be able to provide patient care that is compassionate, appropriate, and effective for the treatment of health problems and the promotion of health.

Knowledge Based Objectives

By the final rotation in Pediatric Radiology as a first year Radiology Resident, the resident **WILL DEMONSTRATE:**

- Use of effective communication and caring and respectful behavior when interacting with patients of all ages and their families
- Ability to gather essential and accurate information about patients when appropriate (from chart, old films, lab, referring MD)
- Ability to work with other health care professionals to provide patient focused care in the radiology department including technologists and nurses in the fluoro room, obtaining consent for sedation, consultation in the reading room, answering the phone, and calling or faxing referring MD's.
- Recognition of principles of physics and radiation biology in daily radiology practice especially as it relates to the unique problems of imaging of the pediatric patient population.

Skill based objectives

By the final rotation in Pediatric Radiology as a first year Radiology Resident, the resident **WILL DEMONSTRATE:**

- Ability to use the ACH Meditech system to obtain needed patient information
- Ability to perform routine UGI, swallowing study, barium enema, VCUG and contrast enema with direct supervision from staff

Medical Knowledge

Residents must demonstrate knowledge about established and evolving biomedical, clinical, and cognate (e.g. epidemiological and social-behavior) sciences and the application of this knowledge to patient care.

Knowledge based objectives

By the final rotation in Pediatric Radiology as a first year Radiology Resident, the resident **WILL DEMONSTRATE:**

- Recognition of normal and abnormal anatomy necessary to interpret ER, plain film, body and neuro imaging and routine fluoro images
- Recognition of importance of obtaining all relevant information before image interpretation or performance of exam
- Recognition of limitations in personal knowledge and not make decisions beyond level of personal competence

Skill based objectives

By the final rotation in Pediatric Radiology as a first year Radiology Resident, the resident **WILL DEMONSTRATE:**

- Recognition of normal and abnormal findings on pediatric chest and abdominal radiographs, bone films from the ER, ER CT scans of head and body, US and NM exams ordered by ER.

Practiced Based Learning and Improvement

Residents must be able to investigate and evaluate their patient care practices, appraise and assimilate scientific evidence, and improve their patient care practices.

Knowledge based objectives

By the final rotation in Pediatric Radiology as a first year Radiology Resident, the resident **WILL DEMONSTRATE:**

- Evidence of independent study using textbooks from suggested reading list
- Appropriate follow-up of interesting cases (looks up biopsy results, gets follow-up from surgeons, etc.)

Skill based objectives

By the final rotation in Pediatric Radiology as a first year Radiology Resident, the resident **WILL DEMONSTRATE:**

- Operation of use ACH PAC's systems

Interpersonal and Communication Skills

Residents must be able to demonstrate interpersonal and communication skills that result in effective information exchange with patients, patient's families, and all levels of professional associates.

Knowledge Based Objectives:

By the final rotation in Pediatric Radiology as a first year Radiology Resident, the resident **WILL DEMONSTRATE:**

- Ability to work as an effective member of the imaging team and contribute to the clinical care of patients when appropriate

Skills Based Objectives:

By the final rotation in Pediatric Radiology as a first year Radiology Resident, the resident **WILL DEMONSTRATE:**

- Ability to dictate written reports for routine fluoro, plain films, routine CT, US, MR and NM exams

Professionalism

Resident must demonstrate a commitment to carrying out professional responsibilities, adherence to ethical principles, and sensitivity to a diverse patient population.

Knowledge Based Objectives:

By the final rotation in Pediatric Radiology as a first year Radiology Resident, the resident **WILL DEMONSTRATE:**

- Discussion of routine fluoro procedures with patients and families with sensitivity to cultural differences
- Commitment to ethical principles especially to unique problems inherent in the pediatric population (informed consent, confidentiality, radiation exposure)
- Professional dress, demeanor and attitude in the reading room and patient care areas

System Based Practice

Residents must demonstrate an awareness of and responsiveness to the larger context and system of health care and the ability to effectively call on system resources to provide care that is of optimal value.

Knowledge Based Objectives:

By the final rotation in Pediatric Radiology as a first year Radiology Resident, the resident **WILL DEMONSTRATE:**

- Knowledge of how their image interpretation and communication affects patient care
- Practice of techniques for cost effective utilization of supplies, time, and personnel in the Radiology Department
- Use of timely performance and interpretation of studies to decrease length of hospital stay for in-patients.

- Concern for assisting patients with complexities of the health care system whenever possible

Skills Based Objectives:

By the final rotation in Pediatric Radiology as a first year Radiology Resident, the resident **WILL DEMONSTRATE:**

- Ability to use ACH normal code dictations appropriately for routine radiographs, CT, US and fluoro procedures
- Ability to use ICD-9 coding with staff guidance on all studies

Goals and Objectives
Pediatric Radiology
Second Year Residents

Patient Care

Residents must be able to provide patient care that is compassionate, appropriate, and effective for the treatment of health problems and the promotion of health.

Knowledge Based Objectives

By the final rotation in Pediatric Radiology as a 2nd year Radiology Resident, the resident **WILL DEMONSTRATE:**

- Effective communication and caring and respectful behavior when interacting with patients of all ages and their families
- Ability to gather and interpret essential and accurate information about patients when appropriate (from chart, old films, lab, referring MD)
- Ability to work with other health care professionals to provide patient focused care in the radiology department including technologists and nurses in the fluoro room, obtaining consent for sedation, providing help locating films and consultation for most common pediatric problems in the reading room, answering the phone, calling referring MD's.
- Application of principles of physics and radiation biology in daily radiology practice especially as it relates to the unique problems of imaging of the pediatric patient population.

Skill based objectives

By the final rotation in Pediatric Radiology as a 2nd year Radiology Resident, the resident **WILL DEMONSTRATE:**

- Ability to use the ACH Meditech system to obtain needed patient information
- Ability to perform routine (fluoro studies, UGI, swallowing study, and VCUG) independently with review of staff .
- Ability to perform some non-routine and invasive studies such as hip tap, TPT placement, intussusception reduction, loop-o-gram with staff supervision
- Ability to interpret NICU head US, chest US, abdomen US, renal US, most nuclear medicine studies, many Body and simple neuro CT and MRI with staff guidance

Medical Knowledge

Residents must demonstrate knowledge about established and evolving biomedical, clinical, and cognate (e.g. epidemiological and social-behavior) sciences and the application of this knowledge to patient care.

Knowledge based objectives

By the final rotation in Pediatric Radiology as a 2nd year Radiology Resident, the resident **WILL DEMONSTRATE:**

- Identification of normal and abnormal anatomy necessary to interpret all plain films, CT, MR, NM, US and fluoro images
- Analysis of all relevant information before image interpretation in order to tailor exams to specific patient problems and needs.
- A beginning understanding of the advantages and disadvantages of available modalities especially as they relate to the pediatric population
- Recognition of limitations in personal knowledge and not make decisions beyond level of personal competence

Skill based objectives

By the final rotation in Pediatric Radiology as a 2nd year Radiology Resident, the resident **WILL DEMONSTRATE:**

- Recognition of normal and abnormal findings on routine pediatric imaging studies and ability to discuss their implications for diagnosis and treatment

Practiced Based Learning and Improvement

Residents must be able to investigate and evaluate their patient care practices, appraise and assimilate scientific evidence, and improve their patient care practices.

Knowledge based objectives

By the final rotation in Pediatric Radiology as a 2nd year Radiology Resident, the resident **WILL DEMONSTRATE:**

- Evidence of independent study including textbooks from suggested reading list, journal articles, and web-based learning
- Appropriate follow-up of interesting cases (looks up biopsy results, gets follow-up from surgeons, etc.)

- Interest in teaching medical students, other service resident teams, radiologic technologists and RN's about interesting cases in reading room including participation in team rounds (NICU, PICU and ward teams)

Skill based objectives

By the final rotation in Pediatric Radiology as a 2nd year Radiology Resident, the resident **WILL DEMONSTRATE:**

- Ability to do a web-based literature search pertinent to Pediatric Radiology
- Operation of ACH PAC's systems

Interpersonal and Communication Skills

Residents must be able to demonstrate interpersonal and communication skills that result in effective information exchange and teaming with patients, their patient's families, and professional associates.

Knowledge Based Objectives:

By the final rotation in Pediatric Radiology as a 2nd year Radiology Resident, the resident **WILL DEMONSTRATE:**

- Ability to work as an effective member of the imaging team and contribute to the clinical care of patients when appropriate
- Discuss imaging results with residents and medical students on telephone and in reading room

Skills Based Objectives:

By the final rotation in Pediatric Radiology as a 2nd year Radiology Resident, the resident **WILL DEMONSTRATE:**

- Ability to dictate correct and concise written reports for most studies, after review with staff

Professionalism

Resident must demonstrate a commitment to carrying out professional responsibilities, adherence to ethical principles, and sensitivity to a diverse patient population.

Knowledge Based Objectives:

By the final rotation in Pediatric Radiology as a 2nd year Radiology Resident, the resident **WILL DEMONSTRATE:**

- Ability to explain all imaging modalities, techniques, etc. to patients and families with concern for cultural differences

- Commitment to ethical principles especially to unique problems inherent in the pediatric population (informed consent, confidentiality, radiation exposure)
- Professional dress, demeanor and attitude in the reading room and patient care areas

System Based Practice

Residents must demonstrate an awareness of and responsiveness to the larger context and system of health care and the ability to effectively call on system resources to provide care that is of optimal value.

Knowledge Based Objectives:

By the final rotation in Pediatric Radiology as a 2nd year Radiology Resident, the resident **WILL DEMONSTRATE:**

- Knowledge of how the timeliness and content of their image interpretation and communication affects patient care
- Practice of techniques for cost effective utilization of supplies and personnel in the Radiology Department
- Use of timely performance and interpretation of studies to decrease length of hospital stay for in-patients.
- Assistance of patients with complexities of the health care system

Skills Based Objectives:

By the final rotation in Pediatric Radiology as a 2nd year Radiology Resident, the resident **WILL DEMONSTRATE:**

- Ability to use ACH normal code dictations appropriately
- Ability to use ICD-9 coding appropriately on all studies

Goals and Objectives
Pediatric Radiology
Third Year Residents

Patient Care

Residents must be able to provide patient care that is compassionate, appropriate, and effective for the treatment of health problems and the promotion of health.

Knowledge Based Objectives

By the final rotation in Pediatric Radiology as a 3rd year Radiology Resident, the resident **WILL DEMONSTRATE:**

- Effective communication and caring and respectful behavior when interacting with patients of all ages and their families
- Ability to gather and interpret essential and accurate information about patients when appropriate (from chart, old films, lab, referring MD)
- Ability to work with other health care professionals to provide patient focused care in the radiology department including technologists and nurses in the fluoro room, obtaining consent for sedation, providing help locating films and consultation for most common pediatric problems in the reading room, answering the phone, calling referring MD's.
- Application of principles of physics and radiation biology in daily radiology practice especially as it relates to the unique problems of imaging of the pediatric patient population.

Skill based objectives

By the final rotation in Pediatric Radiology as a 3rd year Radiology Resident, the resident **WILL DEMONSTRATE:**

- Ability to use the ACH Meditech system to obtain needed patient information
- Ability to perform routine (fluoro studies, UGI, swallowing study, barium enema, and VCUG) independently with review of staff .
- Ability to perform some non-routine and invasive studies such as hip tap, TPT placement, intussusception reduction, loop-o-gram with staff supervision
- Ability to interpret NICU head US, chest US, abdomen US, renal US, all nuclear medicine studies, Body and neuro CT and MRI with staff guidance

Medical Knowledge

Residents must demonstrate knowledge about established and evolving biomedical, clinical, and cognate (e.g. epidemiological and social-behavior) sciences and the application of this knowledge to patient care.

Knowledge based objectives

By the final rotation in Pediatric Radiology as a 3rd year Radiology Resident, the resident **WILL DEMONSTRATE:**

- Identification of normal and abnormal anatomy necessary to interpret all plain films, CT, MR, NM, US and fluoro images
- Analysis of all relevant information before image interpretation in order to tailor exams to specific patient problems and needs.
- Understanding of the advantages and disadvantages of available modalities especially as they relate to the pediatric population
- Recognition of limitations in personal knowledge and not make decisions beyond level of personal competence

Skill based objectives

By the final rotation in Pediatric Radiology as a 3rd year Radiology Resident, the resident **WILL DEMONSTRATE:**

- Recognition of normal and abnormal findings on routine pediatric imaging studies and ability to discuss their implications for diagnosis and treatment

Practiced Based Learning and Improvement

Residents must be able to investigate and evaluate their patient care practices, appraise and assimilate scientific evidence, and improve their patient care practices.

Knowledge based objectives

By the final rotation in Pediatric Radiology as a 3rd year Radiology Resident, the resident **WILL DEMONSTRATE:**

- Evidence of independent study including textbooks from suggested reading list, journal articles, and web-based learning
- Appropriate follow-up of interesting cases (looks up biopsy results, gets follow-up from surgeons, etc.)
- Interest in teaching medical students, other service resident teams, radiologic technologists and RN's about interesting cases in reading room including participation in team rounds (NICU, PICU and ward teams)

Skill based objectives

By the final rotation in Pediatric Radiology as a 3rd year Radiology Resident, the resident **WILL DEMONSTRATE:**

- Ability to do a web-based literature search pertinent to Pediatric Radiology
- Operation of ACH PAC's systems

Interpersonal and Communication Skills

Residents must be able to demonstrate interpersonal and communication skills that result in effective information exchange and teaming with patients, their patient's families, and professional associates.

Knowledge Based Objectives:

By the final rotation in Pediatric Radiology as a 3rd year Radiology Resident, the resident **WILL DEMONSTRATE:**

- Ability to work as an effective member of the imaging team and contribute to the clinical care of patients when appropriate
- Discuss imaging results with residents and medical students on telephone and in reading room

Skills Based Objectives:

By the final rotation in Pediatric Radiology as a 3rd year Radiology Resident, the resident **WILL DEMONSTRATE:**

- Ability to dictate correct and concise written reports for all studies, after review with staff

Professionalism

Resident must demonstrate a commitment to carrying out professional responsibilities, adherence to ethical principles, and sensitivity to a diverse patient population.

Knowledge Based Objectives:

By the final rotation in Pediatric Radiology as a 3rd year Radiology Resident, the resident **WILL DEMONSTRATE:**

- Ability to explain all imaging modalities, techniques, etc. to patients and families with concern for cultural differences
- Commitment to ethical principles especially to unique problems inherent in the pediatric population (informed consent, confidentiality, radiation exposure)

- Professional dress, demeanor and attitude in the reading room and patient care areas

System Based Practice

Residents must demonstrate an awareness of and responsiveness to the larger context and system of health care and the ability to effectively call on system resources to provide care that is of optimal value.

Knowledge Based Objectives:

By the final rotation in Pediatric Radiology as a 3rd year Radiology Resident, the resident **WILL DEMONSTRATE:**

- Knowledge of how the timeliness and content of their image interpretation and communication affects patient care
- Practice of techniques for cost effective utilization of supplies and personnel in the Radiology Department
- Use of timely performance and interpretation of studies to decrease length of hospital stay for in-patients.
- Assistance of patients with complexities of the health care system

Skills Based Objectives:

By the final rotation in Pediatric Radiology as a 3rd year Radiology Resident, the resident **WILL DEMONSTRATE:**

- Ability to use ACH normal code dictations appropriately
- Ability to use ICD-9 coding appropriately on all studies

Goals and Objectives
Pediatric Radiology
Fourth Year Residents

Patient Care

Residents must be able to provide patient care that is compassionate, appropriate, and effective for the treatment of health problems and the promotion of health.

Knowledge Based Objectives

By the final rotation in Pediatric Radiology as a 4th year Radiology Resident, the resident **WILL DEMONSTRATE:**

- Effective communication and caring and respectful behavior when interacting with patients of all ages and their families
- Ability to collect and analyze information about patients in order to optimize choice of imaging modality, and select protocols to provide maximum information needed for diagnosis and treatment.
- Ability to work with other health care professionals to provide patient focused care in the radiology department including triage of cases in MR, CT, fluoro when needed and provide consultation to clinicians in the reading room.
- Application of principles of physics and radiation biology in daily radiology practice especially as it relates to the unique problems of imaging of the pediatric patient population, including managing imaging studies in pregnancy and consultations about radiation exposure in undiagnosed pregnant patients.

Skill based objectives

By the final rotation in Pediatric Radiology as a 4th year Radiology Resident, the resident **WILL DEMONSTRATE:**

- Ability to use the ACH Meditech system to obtain needed patient information
- Ability to perform or assist with all but the most complicated fluoro procedures used in the pediatric population, including interventional procedures
- Ability to interpret all imaging studies to the level expected of the community diagnostic radiologist with staff oversight and consultation.

Medical Knowledge

Residents must demonstrate knowledge about established and evolving biomedical, clinical, and cognate (e.g. epidemiological and social-behavior) sciences and the application of this knowledge to patient care.

Knowledge based objectives

By the final rotation in Pediatric Radiology as a 4th year Radiology Resident, the resident **WILL DEMONSTRATE:**

- Identification of normal and abnormal anatomy necessary to interpret all plain films and imaging studies to the level expected of the community diagnostic radiologist
- Analysis of all relevant information before image interpretation in order to tailor exams to specific patient problems and needs, and to suggest more appropriate or additional studies as needed
- Ability to select the best modality to provide needed information based on ability to compare and contrast characteristics of each
- Recognition of limitations in personal knowledge and not make decisions beyond level of personal competence

Skill based objectives

By the final rotation in Pediatric Radiology as a 4th year Radiology Resident, the resident **WILL DEMONSTRATE:**

- Recognition of normal and abnormal findings on all pediatric imaging studies and assessment of their implications for diagnosis and treatment

Practiced Based Learning and Improvement

Residents must be able to investigate and evaluate their patient care practices, appraise and assimilate scientific evidence, and improve their patient care practices.

Knowledge based objectives

By the final rotation in Pediatric Radiology as a 4th year Radiology Resident, the resident **WILL DEMONSTRATE:**

- Evidence of independent study including textbooks from suggested reading list, journal articles, and web-based learning, including information needed for difficult case management
- Appropriate follow-up of interesting cases (looks up biopsy results, gets follow-up from surgeons, makes rounds on interventional cases)

- Interest in teaching medical students, other service resident teams, radiologic technologists and RN's about interesting cases in reading room including conducting team rounds (NICU, PICU and ward teams)

Skill based objectives

By the final rotation in Pediatric Radiology as a 4th year Radiology Resident, the resident **WILL DEMONSTRATE:**

- Ability to do a web-based literature search pertinent to Pediatric Radiology
- Operation of ACH PAC's systems

Interpersonal and Communication Skills

Residents must be able to demonstrate interpersonal and communication skills that result in effective information exchange and teaming with patients, their patient's families, and professional associates.

Knowledge Based Objectives:

By the final rotation in Pediatric Radiology as a 4th year Radiology Resident, the resident **WILL DEMONSTRATE:**

- Ability to work as an effective member of the imaging team with the goal of optimizing contribution to diagnosis and clinical care of patients.
- Ability to provide consultation with residents and medical students on telephone and in reading room and formulate plans for further imaging of patients when needed.

Skills Based Objectives:

By the final rotation in Pediatric Radiology as a 4th year Radiology Resident, the resident **WILL DEMONSTRATE:**

- Ability to dictate correct and concise and helpful written reports for all studies with minimal oversight from staff

Professionalism

Resident must demonstrate a commitment to carrying out professional responsibilities, adherence to ethical principles, and sensitivity to a diverse patient population.

Knowledge Based Objectives:

By the final rotation in Pediatric Radiology as a 4th year Radiology Resident, the resident **WILL DEMONSTRATE:**

- Ability to explain all imaging modalities, techniques, etc. to patients and families with concern for cultural differences
- Commitment to ethical principles especially to unique problems inherent in the pediatric population (informed consent, confidentiality, radiation exposure)
- Professional dress, demeanor and attitude in the reading room and patient care areas
- Interpretive skills and non-interpretive behaviors which are known to be assets in group practice such as reliability, availability, sharing in all work to be done, voluntary pitching in during times of crisis, affability at all times including times of stress, minimizing influence of personal problems on professional duties

System Based Practice

Residents must demonstrate an awareness of and responsiveness to the larger context and system of health care and the ability to effectively call on system resources to provide care that is of optimal value.

Knowledge Based Objectives:

By the final rotation in Pediatric Radiology as a 4th year Radiology Resident, the resident **WILL DEMONSTRATE:**

- Timely and accurate image interpretation (with staff oversight) to maximize efficient and medically appropriate patient care
- Ability to offer constructive criticism of inefficient or ineffective departmental activities
- Assistance of patients with complexities of the health care system including anticipation and proactive prevention of likely problems

Skills Based Objectives:

By the final rotation in Pediatric Radiology as a 4th year Radiology Resident, the resident **WILL DEMONSTRATE:**

- Ability to use ACH normal code dictations appropriately
- Ability to use complete and accurate ICD-9 coding on all studies

Name _____

Date _____

Checklist
Radiology Resident
VCUG (Female)

Pre-fluoro	Satisfactory	Needs Improvement
-------------------	---------------------	--------------------------

Reviews appropriate prior studies and/or reports if available

Knows indications for study and questions to be answered.

Introduces self to parent and/or patient and other personnel in room

Obtains focused history from parent/nurse/physician
Communication skills (including cultural sensitivity if pertinent)

Asks the right questions

Fluoro Procedure

- Washes hands before
- Washes hands after
- Collimates/magnification appropriately
- Obtains images needed to document normal or pathology
- Fluoro time appropriate
- Recognizes normal findings and pathology
- Which contrast and how given

Post-fluoro

- Communicates with patient and/or parents (asks if any questions – demonstrates cultural sensitivity)
- Selects representative images to be saved if necessary
- Reviews with staff
- Communicates with technologist about F/U (lets patient go ASAP)
- Call results or faxes reports if needed
- Dictates report

Comments : _____

Completed by _____ Date _____

Name _____
Date _____

**Checklist
Radiology Resident
VCUG (Male)**

Pre-fluoro **Satisfactory** **Needs Improvement**

- Reviews appropriate prior studies and/or reports if available*
- Knows indications for study and questions to be answered.
- Introduces self to parent and/or patient and other personnel in room
- Obtains focused history from parent/nurse/physician
Communication skills (including cultural sensitivity if pertinent)
- Asks the right questions

Fluoro Procedure

- Washes hands before
- Uses proper sterile technique for catheter insertion
- Washes hands after
- Collimates/magnification appropriately
- Obtains images needed to document normal or pathology
- Fluoro time appropriate
- Recognizes normal findings and pathology
- Which contrast and how given

Post-fluoro

- Communicates with patient and/or parents (asks if any questions – demonstrates cultural sensitivity)
- Selects representative images to be saved
- Reviews with staff
- Communicates with technologist about F/U (lets patient go ASAP)
- Call results or faxes reports if needed
- Dictates report

Comments

Completed by _____ Date _____

Name _____
Date _____

**Check List
Radiology Resident
Contrast Study of Colon**

**Needs
Satisfactory Improvement**

Pre-fluoro

- Reviews old studies and/or reports if available
- Knows indication for study and questions to be answered
- Introduces self to patient, other personnel
- Obtains focused history from patient if no physician or chart
 - Communication skills (including cultural sensitivity if pertinent)
 - Asks the right questions
- Determines which contrast agent is to be used

Fluoro Procedure

Technique: Single or double contrast studies

- Positioning
- Collimation
- Obtains appropriate images to document the pertinent findings
- Fluoro time appropriate
- Recognizes normal findings and pathology

Post Fluoro

- Communicates with patient
- Selects images to be saved
- Reviews study with staff
- Indicates to technologist whether study is finished and patient may leave the department
- Arranges for follow up films as appropriate
- Calls or faxes results if indicated
- Dictates report

Comments

Completed by _____ Date _____