ArnotHealth

Arnot Ogden Medical Center

ARNOT OGDEN MEDICAL CENTER DIAGNOSTIC RADIOLOGY RESIDENCY

PROGRAM MANUAL 2019 - 2020

TABLE OF CONTENTS

Arnot Health

Arnot Ogden Medical Center

Dear Radiology Residents and Interns,

Welcome to the Arnot Health Diagnostic Radiology Residency Program and the Department of Radiology at Arnot Ogden Medical Center. The Radiologist partners of the Associated Radiologists of the Finger Lakes are proud to serve as your teaching faculty. Our role as mentors will engender the growth and maturity, skills and knowledge necessary to succeed as a diagnostic radiologist.

We eagerly anticipate this new endeavor and the challenges it will bring. We plan to provide the platform and resources for a comprehensive clinical experience and rigorous academic program. Our mutual goal is competency and efficiency in an environment of transparency and mutual respect.

Thank you for choosing our program! We welcome you to the Finger Lakes region of New York and to Arnot Health. We are excited to discover what the future holds.

Sincerely,

Gerard C Buffo, MD FACR
Program Director
Arnot Health Radiology Residency

Associated Radiologists of the Finger Lakes

Arnot Health Mission/Vision/Values Statement

Our Mission:

To partner with each person we serve in order to maximize their physical, emotional, social and spiritual health.

Our Vision:

To be recognized as the premier regional health care system delivering high-quality, safe, cost-effective, socially responsible health care services to all we serve.

Our Values:

- ✓ ***Excellence***
  We strive for the highest clinical quality, patient safety, and patient, physician and employee satisfaction by continually measuring and improving our performance.

- ✓ ***Patient-Centered Health Care***
  In a manner consistent with the highest standards of care:
  We strive to focus on the needs of each patient.
  We apply the skills of communication and listening in order to honor the rights of every individual.
  We teach and encourage our patients to participate in their care, to promote their wellness, and to make well-informed decisions.
  We respect and honor the cultural, ethnic and religious beliefs and practices of each patient.

- ✓ ***Compassion***
  We act with attention, care and an empathetic manner toward our patients and communities in order to alleviate the suffering which arises with health issues.
  We strive to exceed our patients' and our co-workers' expectations for comfort and care in the midst of suffering.

- ✓ ***Teamwork***
  We work together as trustees, staff, volunteers, physicians, and patients to find new, creative and collaborative ways to improve the delivery of health care services.

- ✓ ***Integrity***
  We adhere to the highest ethical and professional standards by a commitment to honesty, confidentiality, trust, respect, and transparency

Arnot Health Graduate Medical Education Mission Statement

Arnot Health's Graduate Medical Education Program is dedicated to providing excellence in training osteopathic physicians to provide high-quality and compassionate care engaged in the practice of evidence-based empathetic medical care for our patients. An emphasis on primary health care and community health services reflects the program's osteopathic philosophy, with specialty care demonstrating our commitment to innovation and quality in all endeavors. We seek to develop clinically skillful, compassionate and culturally competent physicians from diverse backgrounds, who are prepared to become leaders in their communities.

Arnot Health's Graduate Medical Education Program provides a collaborative, learning-centered environment in which highly qualified and diverse faculty, staff, medical students, and physician trainees integrate teaching, research, scholarship, creative activity, and community service. Through intellectual, social and cultural contributions, the Graduate Medical Education Program enriches the lives of those in the community and surrounding region.

Arnot Health Facility Description

Arnot Health system is one of the largest healthcare providers in the Southern Tier of NY. It is over 440 beds comprised of three different hospitals, Arnot Ogden Medical Center, St. Joseph's Hospital and Ira Davenport Memorial Hospital. Arnot Health offers its patients a full spectrum of care in virtually every subspecialty.

The primary training site for programs will be Arnot Ogden Medical Center. This is a tertiary care facility with over 256 beds. Arnot Ogden is recognized for its excellence in its open heart surgery program and valvular open heart program as well as various specialty care services. Arnot has well over 300 physicians and 50 specialties represented and the Falck Cancer Center as well.

Arnot Health provides to the people of the Southern Tier of New York area, high quality and compassionate health care services within the available resources. Health care services will be provided to prevent illness, relieve suffering, aid in health restoration and promote wellness. Health care education will be provided to the patient, community and other health care providers. These services will be cost-effective so that they are affordable to the greatest number of people being served. We will provide necessary services to any person, without discrimination, within the financial limitations of the organization.

To fulfill the mission of Arnot Health, we will provide high quality, cost effective, primary and secondary health care services to the people of the Southern Tier of New York area in a compassionate manner. We will cultivate and maintain cooperative relationships with other providers of health care services. Because of these relationships, the community will have access to services not provided by the Arnot Health system. These relationships can also provide services that are more cost-beneficial when cooperatively provided.

We will be a primary source of health care information for our community. We will cooperate in the provision of education to the community, patients and health providers. We will emphasize education that prevents illness, relieves suffering, restores health and promotes wellness. We believe one of the most important resources in providing care to our patients is our employees. They will be treated and treat each other with respect, honesty and fairness. Leadership will emphasize concern for the individual, as well as the organization and will provide and atmosphere for personal growth. As a responsible corporate citizen, the Arnot Health will share its talents by participation in community affairs.

The American Osteopathic Board of Radiology (www.aobr.org)

Qualifications for Examination in Diagnostic Radiology:

Written Exam

Eligibility

To be eligible for certification in Diagnostic Radiology, candidates must meet the criteria below:

- Be a graduate of a COCA-accredited college of osteopathic medicine.
- Satisfactorily complete a one-year internship in an AOA approved training program.
- Be in the second year of a four-year AOA-approved training program in Diagnostic Radiology, which includes 700 hours of nuclear medicine training. Training should be completed in a single program; if the candidate transfers from one program to another, this must be approved by the AOBR.
- Have AOA approval of all completed training.
- Hold an unrestricted license to practice in a state or territory.
- Adhere to the AOA Code of Ethics.

Candidates are eligible to take the Combined Physics and Diagnostic Imaging written exam in their third year of training or at any exam administration after.

Candidates who have passed the written examinations are eligible to take the oral examinations during their fourth year of training, or at any examination following training as long as they are still board eligible.

Oral Exam

Eligibility

Candidates who have passed both parts of the Combined Written Examination-Physics and Diagnostic Imaging Exam are eligible to take the Oral Exam during their fourth and final year of training, or at any examination following training.

The American Board of Radiology (www.abr.org)

ABR Examination for Diagnostic Radiology

As you progress through your residency and after completion of training, you will take two exams to gain initial certification in diagnostic radiology: the Core Exam and the Certifying Exam.

The Exams

The Core Exam, offered after 36 months of residency training, is image rich and computer based; it covers 18 subspecialty and modality categories. Candidates must pass overall and in each category to receive a passing result.

The Certifying Exam, given approximately 15 months after completion of diagnostic residency training, is also computer based and image rich, and it includes four modules. Three modules are clinical practice areas and may be chosen by the examinee to fit his or her interests, experience, and training. The other module, Essentials of Diagnostic Radiology, is taken by all examinees.

Content for the **Radioisotope Safety Exam (RISE)** is integrated into the **Core** and **Certifying** exams. After a candidate passes the Certifying Exam, the RISE will be scored. Candidates who have submitted the appropriate documentation and receive a passing score on the RISE content will be given the Authorized User-Eligible (AU-E) designation on their certificate. The RISE result will not affect the pass results for either the Core or Certifying exam.

The Core and Certifying Exams are administered at the ABR Exam Centers in Tucson and Chicago.

Timeline for Exams

			Core Exam ↓			Certifying Exam ↓	
Clinical Year, PGY1	R1	R2	R3	R4	Fellowship or Practice		MOC →
12 mos.	12 mos.	12 mos.	12 mos.	12 mos.	12 mos.	3 mos.	

More Information

The ABR offers three Alternate Pathways to certification in diagnostic radiology.

Information is also available for Program Administration (Program Directors and Program Coordinators), as well as Credentialers and Practices.

See our Certificate FAQs.

For those who have completed residency and are seeking employment:

The ABR provides a letter clarifying the mandatory waiting period before certification may be earned. You may provide this letter with your application materials to a potential employer. You can go to https://www.theabr.org/wp-content/uploads/2019/02/Board_eligible_Employment_Letter.pdf for a copy of the letter.

Recognition of Successful Candidates

Successful ABR Candidates are awarded a continuous ABR specialty certificate in diagnostic radiology.

Questions related to these or other board certification issues can be addressed to information@theabr.org, or by calling (520) 790-2900.

Certification Requirements

- **Complete one year in clinical training.**

The first postgraduate year must be ACGME- or RCPSC- accredited clinical training in internal medicine, pediatrics, surgery or surgical specialties, obstetrics and gynecology, neurology, family practice, emergency medicine, transitional year, or any combination of these. Credit for accredited training in other specialties may be granted on an individual basis after submission of the appropriate documents to the ABR. If there is an elective in diagnostic radiology, it must be in a department with an ACGME-accredited diagnostic radiology residency program and cannot be longer than two months. No more than a total of three months may be spent in radiation oncology and/or pathology.

- **Complete an ACGME- or RCPSC-accredited diagnostic radiology program.**

The program must be approved for training in diagnostic radiology by the Residency Review Committee (RRC) for diagnostic radiology of the ACGME, or by the Royal College of Physicians and Surgeons of Canada (RCPSC). A minimum of four months of the four-year diagnostic radiology training program must be spent in nuclear radiology. A minimum of three months must be spent in mammography/breast imaging. No more than 16 months may be spent in any one subspecialty or in research. Those considering careers in research may want to participate in the Holman Research Pathway.

- **Pass the ABR Core Exam.**
- **Pass the ABR Certifying Exam**.
- **Provide proof of valid state or provincial medical license.**

For those in training, a valid training license is acceptable.

- **Demonstrate high moral and ethical principles.**

The American Board of Radiology expects candidates for initial certification to uphold fundamental moral and ethical principles.

Other Important Information

National Institutes of Health (NIH) Stimulating Access to Research in Residency (StARR) R38

Candidates who are participating in ACGME-approved training programs with research orientation and funding through the NIH R38 grant award mechanism, with requirements equivalent to those of the Holman Research Pathway, and have met all other requirements for initial certification, will be considered as eligible for initial certification.

Leaves of Absence

Leaves of absence and vacation may be granted to residents at the discretion of the program director in accordance with the institution's rules. Depending on the length of absence granted by your program, the required period of graduate medical education may be extended accordingly. Residency program directors and their institutional GME offices determine the need for extension of residency training. Therefore, it is not up to the ABR to determine graduation dates for individual residents.

Chapter1: Safety First

Fluoroscopy Safety

The safety of the patient and everyone in the room ultimately is the responsibility of the radiologist.

Best forms of protection (from most effective to least effective):

1. Shielding
    a. Everyone in the room is either wearing a lead apron and thyroid shield, or they are behind the lead wall.
    b. The patient should not be shielded during a fluoroscopy procedure (but may be for overhead/plain films). Fluoroscopy tables are equipped with something called Automatic Exposure Control (AEC), which automatically adjusts the amount of radiation to take into account the thickness of the patient. If lead or a piece of metal are in the field of view, the AEC will interpret that as a very dense patient, and increase the amount of radiation to attempt to penetrate it.
2. Distance
    a. Increase distance from the source
        i. Sources = X-rays originate under the table. Scatter from the patient is the main source of radiation for the operator.
        ii. Outside of 6', radiation from scatter is negligible.
    b. Decrease distance between the image intensifier and the patient. Less distance the radiation has to travel = less radiation the machine will use.
3. Decreasing fluoroscopy time
    a. Changing position: Look where you are, turn fluoro off, move the gantry, look where you are again, repeat as necessary.
    b. ALARA = As Low as Reasonably Achievable
        i. Get the images that you need to make the diagnosis.
        ii. There is no dose limit for pediatric or pregnant patients. You use what you need to use in order to answer the diagnostic question.
            1. Talk to the clinicians to make sure you know the question and that you are performing the correct test.
            2. Fluoroscopy is a consultation service.
    c. Use last image hold as much as possible, especially in pregnant and pediatric patients.
        i. Neonate barium swallow and hysterosalpinograms: last image holds ONLY.
            1. Neonate barium swallow: Most of the time, all you need is esophageal contour (looking for vascular rings) and to assess for tracheoesophageal fistula. You don't need exposures or double contrast for that.
            2. Hysterosalpinograms are typically being done on women trying to get pregnant, so less radiation to the pelvis is a win.
        ii. Room 6 = save image on the screen
        iii. Room 5 = "spade" button on the gantry.

During pregnancy, the first trimester is the most sensitive time for radiation-induced defects (this is the critical period for organogenesis). WOMEN IN THE FIRST TRIMESTER ONLY GET RADIATED IF THEIR LIFE IS IN DANGER.

MRI Safety

1. It is ultimately up to the ordering provider to determine whether or not a patient is safe for MRI. But, they are still going to come to us as the experts.
2. Prosthetic valves and pacemakers: If they are MRI safe, it is still a big deal to get an MRI. The company representative, as well as a radiology nurse, needs to be present for the length of the MRI, and so these needs some coordinating and typically cannot be performed out of the ER.
3. Insulin pumps: NOT MRI SAFE. Some patients have an external pump, which can be disconnected and then they can have an MRI (internal catheter can stay in). NO PUMPS NEAR THE MAGNETIC. The magnet can disrupt the mechanics of the pump, causing it to malfunction and give either too much insulin or too little.
4. If you don't know the manufacturer or what it is, no MRI (especially a metallic device that appears to be close to or within a blood vessel).
5. Contacting the manufacturer is usually helpful.
6. If you don't know, ask the MRI attending.

Codes in Radiology Department

1. How to call a code or a rapid response in rooms 4-6: call 5000, tell the operator there is a rapid response or a code in radiology. DO NOT LEAVE THE ROOM. Rooms 3 (angiography suite) and 4 ("angio east") have an actual code button. The light switch next to the door going out to the mobile unit is a code button.
2. Code cart is located in Bay 3 of our holding area.
3. Codes/rapid responses in MRI:
    a. NO CODE CART INTO THE MRI ROOM
    b. Pt will be brought out of the scanner room on MRI stretcher if possible
    c. Or the magnet must be quenched.
    d. Quenching the magnet:
        i. Only do if absolutely necessary.
        ii. Shut the door (toxic fumes being released) and hit the big red button on the wall.
        iii. Door may be impossible to open after due to vacuum, so then you break the window to get in ("Pressure Equalization Kit").

Fluoroscopy Training

1. R3s and R4s will teach and proctor R1s on fluoroscopy.
2. The first time an R1 performs a procedure, the fluoroscopy attending must be in the room to monitor them.

Chapter 2: Program Goals & Objectives

Goals and Objectives By Year

1. PGY-2/R1
    a. The focus of the second year curriculum is a broad exposure to basic clinical radiology emphasizing emergency radiology and general radiology responsibilities. The year begins with an Introduction to Clinical Radiology short-course that is designed to provide the new resident with foundational knowledge, skills, and attitudes routinely employed in the production, interpretation, and reporting of medical imaging examinations. During the remainder of the year, residents rotate through various subspecialty sections. Emphasis is placed on basic interpretive and clinical practice skills, anatomy, imaging pitfalls, and common and important diseases.
    b. Specific Duties:
        i. Patient care
            1. Participate in daily readout.
            2. Develop skills to perform independent image interpretation.
            3. Maintain BLS and ACLS certification.
            4. Obtain Radiation Safety and Fluoroscopy certification.
            5. Obtain computer system logins.
            6. Effectively use computer systems (PACS, Powerscribe, Quadramed)
            7. Adhere to resident duty hour regulations.
            8. Submit case log.
        ii. Medical Knowledge
            1. Understand imaging appropriateness criteria and how it relates to daily practice.
            2. Attend and participate in daily/weekly radiology conferences.
            3. Attend multidisciplinary conferences.
            4. Take the ACR In-training exam in January.
        iii. Professionalism
            1. Comply with institutional and departmental requirements (wear and turn in radiation badges, dress code, wear ID, etc.).
            2. Regularly attend daily/weekly resident conference.
        iv. Interpersonal and communication skills
            1. Review departmental critical finding policy
            2. Present at Radiology Journal Club
            3. Become proficient in the use of Powerscribe voice recognition system.
        v. Practice Based Learning and Improvement
            1. Consider research options.
            2. Journal club presentation (evidence based medicine).
            3. Understand imaging appropriateness criteria.
        vi. Systems Based Practice
            1. Participate in house staff committees.
            2. Participate and present at multidisciplinary conferences (e.g., radiology-pathology)
            3. Identify potential Practice Quality Improvement (PQI) projects.
            4. Participate in scholarly activity/research

2. PGY-3/R2
    a. The third year curriculum builds upon the foundation of the second year with at least one rotation in each subspecialty section. An elective rotation is also provided during the second year of training. Residents are expected to perform more efficiently and more independently than their first year counterparts and should be familiar with the imaging appearances of commonly occurring disease processes. Residents will begin taking call this year of their residency.
    b. Specific Duties
        i. Patient Care
            1. Maintain Radiation Safety and Fluoroscopy certification.
            2. Begin participation in independent weekend and night float responsibilities.
            3. Maintain BLS and ACLS certification.
            4. Effectively use computer systems (PACS, Powerscribe, Quadramed).
            5. Adhere to resident duty hour regulations.
            6. Submit case log.
        ii. Medical Knowledge
            1. Understand imaging appropriateness criteria and how it relates to daily practice.
            2. Take the ACR In-training exam in January.
        iii. Professionalism
            1. Comply with institutional and departmental requirements (wear and turn in radiation badges, dress code, wear ID, etc.).
            2. Regularly attend daily/weekly resident conference.
        iv. Interpersonal and Communication Skills
            1. Dictate effectively and communicate results as appropriate.
            2. Present at Radiology Journal Club.
            3. Consider project at national meeting.
        v. Practice Based Learning and Improvement
            1. Consider research options.
            2. Present at Radiology Journal Club.
            3. Understand imaging appropriateness criteria.
        vi. Systems Based Practice
            1. Participate in scholarly activity/research.
            2. Consider project at national meeting.
3. PGY-4/R3
    a. Fourth-year residents continue core rotations in each subspecialty section. They also attend a four-week course in radiological-pathological correlation at the AIRP in Silver Spring, MD.
    b. Specific Duties
        i. Patient Care
            1. Maintain Radiation Safety and Fluoroscopy certification.
            2. Participate in independent weekend and night float responsibilities.
            3. Maintain BLS and ACLS certification.
            4. Effectively use computer systems (PACS, Powerscribe, Quadramed).
            5. Adhere to resident duty hour regulations.
            6. Submit case log.

ii. Medical Knowledge
    1. Understand imaging appropriateness criteria and how it relates to daily practice.
    2. Take the ACR In-training exam in January.
    3. Attend AIRP course.
    4. Pass the AOBR written exam (if appropriate), or the ABR core exam.

iii. Professionalism
    1. Comply with institutional and departmental requirements (wear and turn in radiation badges, wear ID, etc.).
    2. Regularly attend daily/weekly resident conference.

iv. Interpersonal and Communication Skills
    1. Dictate effectively and communicate results as appropriate.
    2. Present at Radiology Journal Club.
    3. Present at resident conference.
    4. Consider project at national meeting.

v. Practice Based Learning and Improvement
    1. Research project should be underway.
    2. Journal club presentation (evidence based medicine).
    3. Understand imaging appropriateness criteria

vi. Systems Based Practice
    1. Participate and present at multidisciplinary conferences (e.g., radiology-pathology).
    2. Participate in house staff committees.

vii. Professionalism
    1. Comply with institutional and departmental requirements (wear and turn in radiation badges, wear ID, etc.).
    2. Regularly attend daily/weekly resident conference.

viii. Interpersonal and Communication Skills
    1. Dictate effectively and communicate results as appropriate.
    2. Present at Radiology Journal Club.
    3. Consider project at national meeting.

ix. Practice Based Learning and Improvement
    1. Research project should be completed.
    2. Present at Radiology Journal Club.
    3. Understand imaging appropriateness criteria.

x. Systems Based Practice
    1. Attend national meeting.
    2. Participate and present at multidisciplinary conferences (e.g., radiology - pathology).
    3. Participate in house staff committees.

4. PGY-5/R4
    a. Fifth-year residents complete core rotations in each subspecialty as well as elective rotations. Residents must declare their plans for elective time at least four weeks before the elective begins.
    b. Specific Duties
        i. Patient Care
            1. Maintain Radiation Safety and Fluoroscopy certification

2. Maintain BLS and ACLS certification.
3. Participate in independent weekend and night float responsibilities.
4. Effectively use computer systems (PACS, Powerscribe, Quadramed).
5. Adhere to resident duty hour regulations.
6. Submit case log.

ii. Medical Knowledge
1. Understand imaging appropriateness criteria and how it relates to daily practice.
2. Take the ACR In-training exam in January..
3. Pass AOBR oral board exam (in those residents taking the AOBR boards).

iii. Professionalism
1. Comply with institutional and departmental requirements (wear and turn in radiation badges, wear ID, etc.).
2. Regularly attend daily/weekly resident conference.

iv. Interpersonal and Communication Skills
1. Dictate effectively and communicate results as appropriate.
2. Present at resident conference.
3. Present at Radiology Journal Club.

v. Practice Based Learning and Improvement
1. Research project should be completed.
2. Present at Radiology Journal Club.
3. Understand imaging appropriateness criteria

vi. Systems Based Practice
1. Attend national meeting.
2. Participate and present at multidisciplinary conferences (e.g., radiology - pathology).
3. Participate in house staff committees.

<u>Goals and Objectives By Rotation</u>

1. Chest
   a. 1st rotation
      i. Demonstrate learning of knowledge-based objectives
      ii. Accurately and concisely dictate a report
      iii. Communicate effectively with referring clinicians and supervisory staff
      iv. Understand standard positioning in chest radiology
      v. Obtain pertinent patient information relative to radiologic examinations
      vi. Demonstrate the learning of the clinical indications for obtaining chest radiographs and when CT or MR may be necessary
      vii. Demonstrate a responsible work ethic
   b. 2nd rotation
      i. Demonstrate learning of knowledge based learning objectives
      ii. Continue to build on chest radiograph interpretive skills.
      iii. Demonstrate an understanding of the Appropriateness Criteria for chest radiography
2. Musculoskeletal
   a. 1st rotation

i. Development of working skills in conventional radiology of musculoskeletal conditions with an emphasis on recognition of traumatic injury.
ii. Understanding of radiographic findings in common orthopedic and rheumatologic conditions and following common surgical procedures.
iii. Recognition of complications of surgery on postoperative radiographs.
iv. The resident must be prepared for the second year.

b. 2nd rotation: Introduction to MRI, CT, Ultrasound and Nuclear Medicine as applied to the musculoskeletal system. An appreciation of when these techniques should be employed and a moderate degree of diagnostic skill in these areas is to be developed.

3. Abdominal Imaging (GI/GU)
   a. 1st rotation
      i. Develop skills at interpreting basic imaging studies including CT, IVP, barium studies (upper GI series, barium enema, small bowel series).
      ii. Learn normal anatomy in the various imaging studies and begin to learn various pathologies.
      iii. Develop skills in exam selection for appropriate clinical problems.
      iv. Learn about how the various imaging technologies differ and the current state of each modality.
   b. 2nd rotation
      i. Learn basic interpretation of body MRI studies.
      ii. Develop additional skills in CT, US and general radiology.
      iii. Classification of renal lesions/cysts as well as clinical impact of CT on staging tumors and on patient management.
   c. 3rd-6th rotations
      i. Learn and perform advanced CT techniques including CT angiography, 3D imaging and volume imaging.
      ii. Be able to triage patients to proper studies with increased understanding.
      iii. Increased ability to detect pathology on CT, MRI and US.
4. Breast Imaging
   a. 1st and 2nd rotations
      i. Develop knowledge regarding the technical aspects of performing screening and diagnostic mammography.
      ii. Develop skills at interpreting screening and diagnostic mammograms in a systematic fashion and employing the standardized BIRADS lexicon in reporting. Must be able to distinguish benign from malignant disease. Must reliably detect abnormalities.
      iii. Develop skill with correct utilization of standardized mammography lesion descriptors and final assessment categories.
      iv. Develop skill with making appropriate and competent recommendations for follow-up and/or further intervention.
      v. Develop and demonstrate compassionate and competent non-cognitive skills with respect to patient communication of results and recommendations following breast imaging and diagnostic procedures.
      vi. Acquire skills of interpreting post-operative and post-radiation therapy mammograms. Must be able to recognize post-surgical and post-therapy changes and to distinguish these from findings indicative of recurrent malignant disease.

vii. Acquire knowledge of normal breast anatomy as seen in mammograms, breast sonography and breast MRI. Acquire knowledge of functional and metabolic information obtained from mammoscintigrams.
viii. Performance of image-guided (mammographic or sonographic) pre-operative needle-wire localizations of breast lesions.
ix. Performance of image-guided (stereotactic or sonographic) cyst aspiration and biopsy procedures.

b. 3rd rotation
i. Further develop and refine compassionate and competent non-cognitive skills with respect to patient communication of results and recommendations following breast imaging and diagnostic procedures.
ii. Performance of stereotactic and sonographic image-guided breast biopsy using standard automated core biopsy devices and vacuum.
iii. Refine knowledge and principles of the performance and interpretation of screening and diagnostic breast imaging examinations.
iv. Become familiar with breast imaging quality-assurance and quality control procedures and documentation.
v. Acquire knowledge of national regulations pertaining to breast imaging (the MQSA law).

5. Neuroradiology
a. 1st rotation
i. Learn to interpret CT scans with particular emphasis on studies performed on individuals presenting with acute or emergent clinical abnormalities (infarction, spontaneous intracranial hemorrhage, aneurysmal subarachnoid hemorrhage, traumatic brain injury, infection, hydrocephalus, and brain herniation).
ii. Become familiar with CT appearance of (a) traumatic (fractures and soft tissue injuries) of the orbit, skull base, face and petrous bones and (b) inflammatory (sinusitis, orbital cellulitis, otitis, mastoiditis, cervical adenitis and abscess) lesions.
iii. Learn to identify airway compromise and obstruction.
iv. Learn the appearance of traumatic lesions of the spine with emphasis on findings of spinal instability.
v. Learn the CT and MR findings of hyperacute infarction (including findings on diffusion weighted MRI).
vi. Develop skills in fluoroscopically guided lumbar puncture, lumbar myelography, recognition and treatment of contrast reactions.

b. 2nd rotation
i. Learn to identify and characterize focal lesions and diffuse brain processes and be able to provide a short differential diagnosis for the potential causes of these processes.
ii. Be able to characterize facial fractures based on clinical classification systems (e.g. Le Fort fractures).
iii. Learn to identify neoplastic masses arising in the orbit, skull base, petrous bone and soft tissues of the neck.
iv. Be able to use standard anatomic classification schemes to accurately describe the location of mass lesions.
v. Learn the CT, MRI and myelographic findings of spinal cord compression.

vi. Become familiar with findings on all three modalities that allow for accurate spatial localization of spinal lesions (extra-dural, intra-dural extra-medullary, and intra-medullary).
vii. Be able to identify and differentiate discogenic and arthritic degenerative diseases.
viii. Develop skills in common carotid angiography, cervical myelography, and head and neck aspirations.

c. 3rd and 4th rotations
i. Differentiate different types of focal intracranial lesions (neoplastic, inflammatory, vascular) based on anatomic location (e.g. intra- vs. extra-axial), contour, intensity and enhancement pattern.
ii. Become familiar with the utility of MR perfusion-weighted sequences, functional MR, and MR spectroscopy.
iii. Understand and be able to identify patterns of disease spread within and between areas of the head and neck (e.g. perineural and nodal spread).
iv. Learn the imaging findings that allow for the differentiation of inflammatory and neoplastic lesions.
v. Learn the imaging features of intraspinal processes, including syringomyelia, arachnoiditis, and spinal dysraphism.

6. Nuclear Medicine
a. 1st and 2nd rotations
i. Understand the principles of radiotracer technique including radiopharmacology, biodistribution, physics and instrumentation.
ii. Understand the principles of radiation biology, contamination and decontamination radiation protection of patients and personnel (ALARA, effects of distance, time, and shielding, handling radioactive materials).
iii. Understand the significance of clinical history in image interpretation.
iv. Understand normal distribution of various radiopharmaceuticals.
v. Identify scans based on radiotracer distribution.
vi. Acquire skills for interpretation of the following studies:
1. Bone scan
2. Gastric emptying studies
3. Hepatobiliary studies (acute cholecystitis)
4. Renal scans (MAG3, DTPA, DMSA)
5. Lymphoscintigraphy including sentinel node detection

b. 3rd and 4th rotations
i. Acquire skills for interpretation of the following studies:
1. Clinical PET (cancer diagnosis and staging, epilepsy, myocardial viability)
2. Gated blood pool imaging – planar and SPECT
3. Myocardial perfusion imaging with T1-201 and Tc-99m Sestamibi Planar, SPECT, gated SPECT
4. Become familiar with the therapeutic administration of I-131 for the treatment of thyroid disease under the mentorship of a fellowship trained Nuclear Radiologist.

7. Ultrasound
    a. 1st rotation
        i. Acquire a basic understanding of ultrasound physics principles and instrumentation.
        ii. Learn ultrasound cross-sectional and vascular anatomy.
        iii. Must be able to distinguish normal from abnormal in the abdomen, pelvis, superficial organs, pregnancies, and vascular system.
        iv. Become familiar with endocavitary scanning techniques.
        v. Learn to detect basic ultrasound emergencies.
        vi. Must reliably diagnose ultrasound emergencies such as ectopic pregnancy, ovarian and testicular torsion, acute cholecystitis, hydro/pyonephrosis and deep venous thrombosis.
    b. 2nd rotation
        i. Acquire knowledge about Doppler physics and duplex imaging.
        ii. Acquire hands-on scanning skills.
        iii. Interpret more complex obstetrical ultrasound cases, more complex vascular ultrasound cases (carotid, liver duplex, TIPS) and specialized small parts ultrasound (prostate, complex scrotal cases).
    c. 3rd and 4th rotations
        i. Acquire knowledge about Doppler physics and duplex imaging.
        ii. Acquire hands-on scanning skills.
        iii. Interpret more complex obstetrical ultrasound cases, more complex vascular ultrasound cases (carotid, liver duplex, TIPS) and specialized small parts ultrasound (prostate, complex scrotal cases).
8. Pediatric Radiology
    a. 1st rotation
        i. Perform UGI and VCUG exams on children older than 1 year with attending in the room.
        ii. Perform fluoroscopy on teenagers without the attending if the resident has done adult fluoroscopy.
        iii. Learn to recognize malrotation, GE reflux, VU reflux, pyloric stenosis.
        iv. Learn to recognize normal bone, chest and abdomen films at various ages, Salter type fractures, pneumonia, reactive airways disease, bronchiolitis, sickle cell changes, croup.
    b. 2nd rotation
        i. Perform familiar fluoroscopy exams.
        ii. Watch, then perform, enema exams and exams on patients less than one year with the attending in the room.
        iii. Learn to recognize inflammatory bowel disease, meconium ileus, intussusception, malrotation, swallowing dysfunction.
        iv. Learn to recognize ICU pathology: RDS, chronic lung disease, edema, meconium aspiration, tubes and catheters and their proper positions.
        v. Learn to recognize and characterize abdominal and mediastinal masses, trauma pathology.
    c. 3rd rotation
        i. Perform all exams with or without attending in the room, depending on degree of familiarity.

ii. Learn to recognize congenital cardiac disease, dwarfing syndromes, postoperative complications.
iii. Learn to recognize bowel pathology, lung infiltration, abnormal fluid collections.
iv. Learn to recognize intracranial pathology, abnormal bowel, congenital renal abnormalities, normal and abnormal appearance of the maturing pelvis, testicular torsion.

9. Interventional Radiology
    a. 1st rotation
        i. Become familiar with the terminology and the inventory within the Angio suite.
        ii. Understand and be able to use the equipment in the Angio suite.
        iii. Be able to perform a history and physical exam.
        iv. Be able to write a consultation on a patient and obtain informed consent for the procedures.
        v. Begin to feel comfortable performing basic procedures, and participate as first assistant to the attending on advanced procedures.
        vi. Understand the principles of conscious sedation and how to use the proper medications during a procedure.
    b. 2nd rotation
        i. Feel more comfortable with all the requirements of the first month rotation.
        ii. Become more actively involved in the more advanced procedures as first assistant. Graded responsibility will be given depending on the individual resident's ability. Become primary operator on the more basic procedures.
        iii. Become more involved with the day to day running of the section.
    c. 3rd and 4th rotations
        i. Familiarize oneself with all the requirements of the first two rotations.
        ii. Be a full active member in the running of the section. Taking on more responsibility as the senior resident on the service.
10. Computed Tomography
    a. 1st and 2nd rotation
        i. Learn and become comfortable with normal abdominal anatomy, normal chest anatomy, and normal pelvic anatomy.
        ii. The resident will learn diagnostic criteria for CT diagnosis of renal stones, ureteral stones, appendicitis, aortic aneurysm, and liver metastases.
        iii. The resident will understand contrast administration protocols with respect to detection of liver lesions and other intraabdominal pathology.
    b. 3rd rotation
        i. The resident will learn diagnostic criteria used for neoplasm of lung, liver, pancreas, nodal system, as well as traumatic injuries to liver, spleen, pancreas and kidneys when evaluating with CT.
        ii. The resident will protocol and check all CT cases as needed.
        iii. The resident will understand and oversee contrast administration for CT angiograms
        iv. The resident will be able to diagnose fluid collections including ascites, pleural effusion and cul de sac fluid and intrabdominal abscesses, and other entities such as small bowel obstruction, and mesenteric involvement with a tumor.
    c. 4th rotation

i. Learn advanced analysis for trauma and emergency diagnosis by CT with definitive correlation with MR, US, plain film, and nuclear medicine review of such cases.
ii. Protocol cases to be performed, taking into account pertinent clinical history and reason for examination
iii. Learn 30 CT protocols.

11. Magnetic Resonance
    a. 1st rotation
        i. The resident will learn the type of contrast weighting present on MR images.
        ii. The resident will learn the mechanisms that generate T1, T2, and contrast-enhanced images.
        iii. The resident will learn the principles of fat saturation and chemical-shift based imaging.
        iv. The resident will learn the most common artifacts in MRI and normal abdominal and pelvic MRI anatomy.
    b. 2nd rotation
        i. The resident will learn to protocol cases, integrating data from other studies, to assure that the MRI examination is appropriate and of sufficient quality to address the clinical concerns of the patient and referring physician.
        ii. Describe basic physics concepts used in generating clinical MR images and identify pulse sequences.
        iii. Distinguish between normal and abnormal musculoskeletal, chest, cardiac, abdomen, and pelvis anatomy, particularly as seen on MR images.
        iv. Identify pathology in order to interpret routine MR musculoskeletal and body imaging studies.
    c. 3rd and 4th rotations
        i. The resident will master the goals and objectives of the prior rotations.
        ii. The resident will learn to run the service independently and present cases to the attending with a differential diagnosis.
        iii. The resident will feel comfortable with MRI imaging anatomy and pulse sequences.
12. Emergency Radiology
    a. 1st rotation
        i. Learn normal plain film anatomy and appropriate positions for tubes, catheters and other medical devices on plain films.
        ii. Learn to diagnose common and life threatening conditions (e.g. pneumothorax) on chest radiographs, pneumoperitoneum on abdominal radiographs, and spine fractures.
        iii. Demonstrate the proper use of radiologic equipment such as fluoroscopy equipment during emergency GI/GU procedure in adults and children.
        iv. Understand cardiac and aortic arch great vessel anatomy and the physiologic basis for common diseases (e.g. congestive heart failure and pulmonary hypertension, pericardial effusions with tamponade and coarctation of the aorta), understanding the plain film findings in common diseases of the heart and great vessels. Become familiar with common musculoskeletal injuries seen in the emergency room.

b. 2nd rotation
    i. Develop a greater understanding of imaging anatomy for plain film radiography, CT, MRI studies obtained in the emergency setting.
    ii. Become increasingly comfortable with common emergent and life threatening conditions seen in the emergency department.
    iii. Be able to run the service independently with interpretation of plain film radiography and present findings of imaging studies to the attending.

13. Cardiac Imaging
    a. The resident should become comfortable with basic cardiac imaging techniques and scans.
    b. The resident should gain knowledge of nuclear agents for each exam and the specific properties as they pertain to cardiac imaging and safety.
    c. The resident should understand radiation safety and how it affects the appropriateness of the exam.
    d. The resident should review cardiovascular CT angiography studies with an understanding of the disease processes encountered.
    e. The resident should become familiar with coronary CT angiography studies understanding both image acquisition and interpretation.

Chapter 3: Hours and PTO Policies

1. Hours:
    a. Day hours are 7am-5pm, Monday-Friday.
    b. Night hours = Monday - Friday, 5pm-7am. There is no resident coverage on Saturday and Sunday nights.
    c. Weekend hours = Saturday 7am-5pm, Sunday 8am-5pm
        i. NYS regulations specify we cannot work 7 days in a row. So if you are working that weekend, you need to take 1 day off during the preceding week.
        ii. If you are fluoroscopy, you need to find coverage for the day you are not coming in. Email both chiefs and the person who is covering for you.
    d. 4pm-5pm: Physics study time
2. Duty Hours
    a. NYS Duty Hours Regulations
        i. For full details, please see the NYS 405 Regulations on the health.ny.gov website.
        ii. Maximum of 80 hours per week averaged over 4 weeks, inclusive of all in-house activities, clinic assignments, and moonlighting activities.
        iii. Mandatory Weekly Time Off: At least one 24-hour period off per week.
        iv. Mandatory rest/Time Off Between Work Periods: scheduled on-duty assignments separated by not less than 8 non-working hours.
        v. Maximum Work Period Length: Postgraduate trainees are not scheduled to work for more than 24 consecutive hours. Residents may remain on duty for up to 3 additional hours of transition time to be used for transfer of patient care, rounds, or grand rounds. No new patient care may be assigned during the 3-hour transition time.
        vi. Maximum On Call (In-House) Frequency: Programs utilizing surgical exemption, call is limited to every 3rd night. Otherwise, every 3rd night averaged over 4 weeks.
        vii. Night Float Maximum Frequency: Night float must occur within the context of the maximum work hours per week, mandatory weekly time off, and mandatory time off between work periods.
    b. Duty hours are logged weekly in Medhub.
3. Paid Time Off (PTO) policy
    a. GME PTO policy:

In order to ensure adequate coverage of call and inpatient care with minimal inconvenience to continuity of patient care, all interns/residents/fellows must submit time away requests via Med Hub Software forty-five (45) days prior to the start of the block that proposed vacation is to occur in order to be reviewed for approval. In addition, PTO requests may be subject to *program specific scheduling, i.e. PTO may or may not be allowed during certain block rotations.

Scheduled PTO: The Hospital shall provide new incoming PGY-1 interns/residents with 15 days (3 weeks) PTO time and PGY-2 and PGY-3 residents with 20 days (4 weeks) PTO time per academic year. Please note PTO is not cumulative from year to year and requires prior approval. Unused PTO will not be paid out at the end of the academic year. The intern/resident is responsible for notifying their respective clinic of approved PTO, otherwise they will be reprimanded.**

SCHEDULED PAID TIME OFF (PTO) PROCEDURE:

To request scheduled time away (educational or paid time off), interns/residents/fellows must submit all PTO Request via Med Hub Software forty- five(45) days prior to the start of an academic block that their vacation is to occur in for time off.

1. All PTO requests must be submitted via Med Hub Software. Designee of specified programs or appointed Chiefs will receive requests and approve or *reject. All requests will go to the residency coordinator/program director for review of adherence of PTO policy and sign off. Please allow one week for processing and notification. *Please include explanation with rejection notice, i.e. does not meet department policy requirements, etc.
2. Once final approval/rejection received, trainee(s) are notified via Med Hub Software.
3. A contact number for emergencies must be submitted prior to leaving to Program Director/designee or Chief for respective program informing them intern/resident/fellow will be absent.
4. Please refer to program-specific PTO requirements (if applicable) located in respective program's manual. For example-Medicine rotations: There is no more than one (1) resident allowed away at one time during a medicine rotation per team.
5. Any additional time away from program that exceeds PTO may require extended time in program per AOA/ACGME requirements.
*Please note: PTO includes sick time (Unscheduled Time Off). Please see below for Unscheduled Time Off Procedure.

Unscheduled Time Off Procedure:

1. For unscheduled absences due to illness, emergencies, etc., intern/resident/fellow must do the following:
a. Call and SPEAK with chief resident or Program Director/designee of *specified programs and follow their instructions. DO NOT TEXT! Intern, residents or fellows who fail to follow the proper notification channel for unscheduled absences will be **reprimanded. **Please know if assigned an additional shift this does not exempt use of PTO.

b. Intern/Resident/Fellow must then contact their assigned rotation senior or chief AND clinic. DO NOT TEXT! (Chief Resident/Program Director/designee will ensure proper notification channel followed and contact operator. Please know above responsible person(s) do NOT decide use of PTO.

c. The Chief Resident or Program Director/designee of *specified programs will notify the respective coordinator or GME Office (if coordinator not available) of the unscheduled absence as soon as possible. If office is closed, please call at opening time in morning and SPEAK with someone; do not text, leave a voice mail or email this information.

d. The intern, resident or fellow absence will be documented by respective coordinator in Med Hub as an unscheduled absence and will be deducted from PTO balance. There are not exceptions!

e. In the event a Chief/PD of *specified programs is away he/she will notify trainees who to contact in their absence prior to leaving via email.

Extended Time or Leave of Absence:

Each Program Director serves as the key resource on specialty board examinations and materials for application and preparation. Therefore, the Program Director should be contacted by the Resident/Fellow Physician to confirm the effect that a leave of absence, for any reason, will have on their ability to satisfy criteria for completion of the residency or fellowship program and eligibility for specialty board examination. Resident/Fellow physicians granted leave shall be responsible for making up the leave time in terms of maintaining his or her satisfactory performance and program progression, as determined by the Program Director and documented via written documentation outlining the program extension time. A leave of absence may result in an extension of the total length of the time required to complete the training program. All leaves will be processed in accordance with Arnot Ogden Medical Centers Policies on Family and Medical Leave of Absence (FMLA), Personal Leave of Absence (PLOA) or Administrative Leave of Absence, as applicable.

*Specified Programs include: Cardiology Fellowship, Endocrinology Fellowship, GI Fellowship, PGY-2 or greater Radiology Residency and PGY-1 greater than first 6 months Psychiatry Residency

**Reprimand:
• First Offense Penalty = You will be assigned an additional call
• Second Offense Penalty = Remediation, Suspension or Termination

b. Radiology specific additions to the GME PTO policy:
    i. You MUST find someone to cover you if you are taking time off while on fluoroscopy. This includes your day off before working a weekend and any conference time. Doing otherwise creates a lot of unnecessary stress in the room. Email both chiefs and the person who is covering for you.
    ii. Unexpected time off: If you cannot come into work for any reason, notify a chief or the program coordinator via phone, as specified in the GME PTO policy. In addition, notify both chiefs and the program coordinator via email.

4. Elective Month = evaluation for this rotation gets sent to the program director along with the rotation subspecialty. Contact the program coordinator to have the evaluation forwarded to the program director

Chapter 4: Resident Responsibilities

1. Lectures
    a. Lectures are held from 12-1 everyday in the resident reading room. There is a schedule of which attending will be teaching.
    b. If the designated attending is unable to attend for any reason, then a video in the field that attending would have been lecturing in will be substituted.
2. Journal Club
    a. Journal Club will be the second Monday of every month.
    b. Journal article must be emailed out to your fellow residents and the attending designated to lecture that day at least 1 week beforehand.
    c. Schedule of journal club assignments can be found on the google drive.
3. Core Club
    a. Core Club will be every Thursday from 12-1.
    b. Residents will be assigned approximately 20 pages from Core Radiology.
    c. Prepare a PowerPoint containing all the information from Core Radiology, as well as additional information you deem pertinent. It will be a rarity that all of this information can be presented in one hour. The lecture will be a summary of the information, with the PowerPoint serving as a reference for your fellow residents.
    d. Schedule of core club assignments can be found on the google drive.
4. Tumor Board
    a. First and third Wednesday of each month
    b. R2 and R3 go over the images for each case.
    c. Go over each case with a fine-tooth comb. Don't just read the report, that is not what they are looking for.
    d. A tally of how many tumor boards the R2 and R3s have been done is on the google drive. (It should be pretty equal by the end of the year).
    e. Starting in May of each year, R1s will do tumor board with an R2 or R3.
5. Monthly resident meeting: First Monday of the month at 4pm in the resident reading room.
6. Role of R1s
    a. Anything STAT study you read needs to be signed out with an attending as soon as you are done dictating it.
    b. Answering the phone: If you don't know, take a message or find a senior. If it's something critical and no one else is in the room, go find an attending.
    c. R1s never, ever under any circumstances put in a preliminary read.
    d. Medical Students and Non-radiology rotators
        i. Create the schedule
        ii. Orientation on the first day of the block the rotator is present:
            1. Tour of the department
            2. Radiation safety and badges
            3. Distribute and review curriculum and rotation requirements
        iii. Coordinate evaluations
        iv. Administer pre-rotation and post-rotation exams.
7. MRI Sedation
    a. A history and physical (H&P) are performed on patients that come in for MRI under sedation.

b. What residents do:
    i. Find a stethoscope
    ii. Talk to the patient and/or their parent (this is mostly done on children). Find out why they are having this done, past medical history, allergies, medications, surgeries. You can also use this opportunity to get a very good history for interpreting the MRI.
    iii. Physical exam
    iv. Look over the recent H&P from their ordering provider/primary care provider to make sure nothing is amiss or different.
    v. Fill out the brief H&P form.
    vi. On the yellow physician order form write in black ink (if appropriate):
        1. "Ok for MRI under sedation per anesthesia"
        2. "Ok to discharge per anesthesia per protocol"
        3. Sign your name and date
    vii. In a few hours, a nurse will either call or qliq you and tell you the patient is ready to be discharged. Confirm anesthesia said it was ok. Then log onto quadramed and discharge the patient.

8. Things residents sign:
    a. Post-procedure note. Every procedure, every time.
        i. Hip injections, lumbar punctures, arthrograms, thoracentesis, paracentesis, etc.
        ii. Note: If you do a procedure on an inpatient with Dr. Acosta, he will also want a post-procedure note in quadramed.
    b. CCK and Lasix orders: Review the order and sign your name and date anywhere on the yellow physician order form the nuclear medicine tech will give you (black ink).
    c. MRI morphine pump clearance
        i. Palpate the morphine pump
        ii. Ensure it is not perpendicular to the magnetic field (its longest dimension should not be directed AP). See diagram the MRI tech will give you.
        iii. Sign paper provided by MRI tech.
    d. Lumbar puncture (LP) orders
        i. Now done entirely in quadramed
        ii. Order selection —> Dr. Acosta orders —> post-LP/myelogram orders
        iii. Click the orders specific to the procedure the patient had done (LP or myelogram)
            1. LP = head of bed <30'
            2. Myelogram = head of bed >30' (contrast may cause seizures)

Chapter 5: Becoming a Radiologist

Report Basics

1. Components:
    a. Procedure: Type of exam, whether it was with or without contrast (IV) and the number of views for plain films.
    b. Indication:
        i. Outpatient: verbatim what is on the scanned order form
        ii. Inpatient: what was given as the indication, but NEVER use rule out, history of, exclude, etc.
            1. Ex: A CT chest, abdomen, and pelvis was ordered to exclude metastatic disease. You dictate metastatic disease.
            2. Ex: A CXR was ordered to rule out pneumonia. You dictate pneumonia.
    c. Technique: Number of views/planes, whether it was performed with or without IV contrast, whether more than one sequence was used for MRI.
        i. Oral contrast designation is less important, so it is up to the dictating physician whether or not to include that.
        ii. For MRI, every plane and sequence does not need to be listed. "Multiplanar, multisequence MRI" is fine.
        iii. IMPORTANT: For every angiographic study (PE studies, CTA/CVA, etc), you MUST dictate whether a 3-D and/or MIP image was included.
    d. Findings:
        i. Especially early on, try to describe the findings instead of just giving the diagnosis. It will help you later.
        ii. Develop a sequence that you are comfortable with that you do in the same order every time you look at that particular study. It works well to avoid missing things.
    e. Impression:
        i. List the diagnosis or differential diagnosis
        ii. Recommendations to help the ordering provider narrow the differential or how to follow something.
2. Templates:
    a. Scan through them carefully if you are going to use them.
    b. You can search through everyone's templates by name if you like a particular way they dictate.
    c. You can save and create your own templates.

How to Present/Take a Case

1. Type of study and view/plane
2. With or without contrast (including oral)
3. State your *findings.* The findings are the description of what the lesion looks like, not the diagnosis.
    a. Ex: Findings: anechoic well-circumscribed circular lesion with imperceptibly thin wall demonstrating posterior acoustic enhancement. Diagnosis: simple cyst.
4. Differential diagnosis. It may be appropriate to say say you think one is more likely than another and/or what you would do next to narrow the differential.

How to Sign Out

1. In the first few months, or the first few times signing out a study/modality, only sign out a few (maximum 5) at a time. That will give the attending greater opportunity to go through each study with you in detail, as well as go over particular information about that modality.
2. Try to sign out with the attending that is on that particular modality. For example, if you are on CT, then try to sign out with the attending that is on CT.
3. All studies must be signed out by 4pm. The exception to this is fluoroscopy and IR. Those rotations do not have designated end times.

Rotations

1. R1:
    a. 4 weeks Introduction to Clinical Radiology
    b. 10 weeks GI/GU
    c. 4 weeks Nuclear Medicine (Responsible for GI/GU during this block as well).
    d. 8 weeks CT
    e. 4 weeks Chest
    f. 4 weeks ER
    g. 4 weeks Ultrasound
    h. 4 weeks Neuroradiology
    i. 2 weeks MSK
    j. 4 weeks MRI
    k. 4 weeks Pediatric
2. R2:
    a. 9 weeks of Nights
    b. 4 weeks GI/GU
    c. 4 weeks Nuclear Medicine
    d. 2 weeks Ultrasound
    e. 4 weeks MRI
    f. 2 weeks MSK
    g. 4 weeks Neuroradiology
    h. 4 weeks Mammography
    i. 6 weeks Interventional Radiology
    j. 2 weeks CT
    k. 4 weeks Elective
    l. 3 weeks Chest
    m. 4 weeks Pediatrics (at University of Rochester)
3. R3:
    a. 9 weeks of Nights
    b. 4 weeks of Pediatrics (at University of Rochester)
    c. 4 weeks GI/GU
    d. 3 weeks Interventional Radiology
    e. 4 weeks Mammography
    f. 2 weeks MRI
    g. 4 weeks Neuroradiology
    h. 4 weeks at AIRP
    i. 4 weeks Nuclear Medicine
    j. 4 weeks Elective
    k. 4 weeks Ultrasound
    l. 2 weeks CT

m. 4 weeks ER

4. R4:
    a. 8 weeks Nights
    b. 4 weeks GI/GU
    c. 4 weeks Nuclear Medicine
    d. 4 weeks Mammo
    e. 4 weeks Cardiac Radiology
    f. 4 weeks IR
    g. 2 weeks Ultrasound
    h. 2 weeks MRI
    i. 16 weeks Elective
    j. 4 weeks Neuroradiology
5. Goal numbers for each year: (Please note that these numbers exceed graduation requirements, and are not required for completion of each year. They represent goals for residents in each year to aim for, that can be achieved at this facility, to prepare them for the following year, their career, as well as board examinations).
    a. R1:
        i. CXR = 1000
        ii. Non-CXR Plain Films = 1000
        iii. Chest CT = 200
        iv. Abd/Pelvis CT = 200
        v. Head CT = 200
        vi. Spine CT = 5
        vii. CTA/CVA = 5
        viii. Head/Neck CT = 5
        ix. V/Q Scan = 5
        x. Nuclear stress test = 5
        xi. Head MRI = 20
        xii. Abdomen MRI = 5
        xiii. Spine MRI = 20
        xiv. MSK MRI = 20
        xv. Pelvic US = 20
        xvi. Abd US = 50
    b. R2:
        i. CXR = 1000
        ii. Non-CXR plain films = 1000
        iii. Chest CT = 500
        iv. Abd/Pelvis CT = 500
        v. Head CT = 500
        vi. Spine CT = 100
        vii. Nuclear stress test = 50
        viii. Head MRI = 100
        ix. Abdomen MRI = 20
        x. Spine MRI = 50
        xi. MSK MRI = 100
        xii. Pelvic US = 100
        xiii. Abd US = 100

xiv. Mammo = 200

c. R3:
    i. CXR = 1000
    ii. Non-CXR plain films = 1000
    iii. Chest CT = 200
    iv. Abd/Pelvis CT = 200
    v. Head CT = 200
    vi. Spine CT = 100
    vii. Nuclear stress test = 20
    viii. Head MRI = 50
    ix. Abdomen MRI = 20
    x. Spine MRI = 50
    xi. MSK MRI = 100
    xii. Pelvic US = 50
    xiii. Abd US = 50
    xiv. Mammo = 400
d. R4:
    i. CXR = 1000
    ii. Non-CXR plain films = 1000
    iii. Chest CT = 200
    iv. Abd/Pelvis CT = 200
    v. Head CT = 200
    vi. Spine CT = 100
    vii. Nuclear stress test = 10
    viii. Head MRI = 50
    ix. Abdomen MRI = 20
    x. Spine MRI = 50
    xi. MSK MRI = 100
    xii. Pelvic US = 20
    xiii. Abd US = 20
    xiv. Mammo = 600

6. Call
    a. Nights
        i. R2 = 9 weeks
        ii. R3 = 9 weeks
        iii. R4 = 8 weeks
    b. Weekends
        i. R2 = 12
        ii. R3 = 8
        iii. R4 = 6

Chapter 6: Miscellaneous

Important Dates

1. In service exam = every January. Program coordinator will email a link to the prometrics website. Coverage must be found if on fluoroscopy or night call, and email both chiefs and the person that is covering for you.
2. RSNA = usually every November, and usually the week before Thanksgiving. This is an annual conference held in Chicago where there are amazing lectures and presentations. We take the week off from reading studies and watch online. Everyone takes a turn doing fluoro that week (so that whoever is on fluoro does not miss out on the whole conference).
3. Board exams = ABR or AOBR (depending on availability)
    a. ABR
        i. The Core Exam: written exam (clinical and physics questions) at the end of R3.
        ii. The Certifying Exam: written exam 15 months after graduation.
        iii. No oral boards
    b. AOBR
        i. Written exam at the end of R3 year
        ii. Oral exam at the end of R4 year
4. Poster session
    a. Every April
    b. GME office will notify residents regarding details for submission and exact dates.
5. Away rotations:
    a. Pediatrics:
        i. University of Rochester
        ii. 4 weeks during R2 and R3 years
        iii. Housing is provided
        iv. May have to come back and work a weekend.
    b. AIRP
        i. Graduation requirement
        ii. 4 week course in Silver Springs, Maryland
        iii. R3 year
        iv. Sign up must be done by program coordinator or program director
        v. A case will need to be submitted beforehand. This case is meant to be something unique or rare and must have radiologic images, gross images, and pathology slides.
        vi. $2500 for room, board, and travel expenses. Receipts to be submitted to the GME office within 30 days.
6. AOCR
    a. Graduation requirement
    b. April of R3 year
    c. Present original research
    d. Submit expenses to GME office for reimbursement within 30 days.
7. Fellowship Applications
    a. End of R2/beginning of R3. The ideal time to have CV completed and letter of recommendations done by the end of R2.
    b. Do case reports, posters, research by the end of R2.

c. Ask for letters of recommendation middle of R2 year.

Critical Findings Policy

1. The radiology department will notify the referring physician or other caregiver of any critical test result from the following list as soon as possible, and in no case later than one hour from interpretation.
2. Preliminary reports will documentation of critical results. The final imaging report will document both that a critical result was identified and that is was communicated verbally (including time and date).
3. Critical test results in the acute setting:
    a. Intracranial hemorrhage
    b. Cerebral midline shift
    c. Unstable spinal fracture
    d. Spinal cord compression
    e. Pneumothorax
    f. Pulmonary embolism
    g. Aortic dissection or tear
    h. Ruptured aortic aneurysm
    i. Deep venous thrombosis
    j. Testicular torsion
    k. Ectopic pregnancy

Allergy Protocol

Sometimes a study must be done, even though the patient is allergic to the needed contrast agent. There are multiple protocols to choose from for pre-medication. See Arnot Ogden Policy Manual for additional details.

1. Urgent Patients = 4-6 hours prior to contrast administration:
    a. Methylprednisolone 40mg IV every 4 hr prior to exposure OR 200mg hydrocortisone IV single dose
    b. Diphenhydramine 50mg oral or IV 1 hour prior to exposure
2. Emergent patients/need for immediate administration
    a. Hydrocortisone 200mg IV and diphenhydramine 50mg IV
    b. Dose to be administered at the ER providers discretion base on clinical situation.
    c. The patient will be monitored and the ER RN/provider will accompany the patient to radiology.
3. Elective patients: 24 hours prior to exposure
    a. Prednisone 50mg oral at 12hr, 6hr, and 1hr prior to exposure
    b. 50mg diphenhydramine oral or IM 1hr prior to exposure

Emergent After-Hours MRI Criteria

MRI off-hours may vary in accordance with hospital demands, however is generally considered to be 5pm-7am Monday-Sunday, and on holidays. MRI technologist off-site arrival time shall be less than or equal to 60 minutes. Listed below are the diagnoses, signs, and/or medical conditions which may trigger response by the on-call MRI technologist.

MRI-Brain:

1. Stroke = if emergent MRI shall immediately impact treatment.
2. Vertebral/carotid artery dissection = if contraindications to CTA
3. Dural venous sinus thrombosis = if CT venogram contraindicated

4. Intracranial complications of infection, requiring URGENT treatment
5. Tumor/metastasis, with acute decline, requiring URGENT treatment
6. Hydrocephalus, for follow up of known increased intracranial pressure and MRI shall immediately impact treatment.

MRI-Spine

1. Acute spinal cord injury
2. Acute spinal cord compression
3. Acute cauda equina syndrome
4. Major trauma, with neurological deficit or requiring MRI before URGENT treatment
5. SIGNIFICANT concern for epidural hematoma
6. Acute neurological deficit, unexplained
7. Acute spinal infection

MRI-Bone & Joints

1. Infection, acute and life or limb threatening

MRI-Abdomen

1. Acute appendicitis in pregnant women only

<u>Emergent After-Hours Nuclear Medicine Criteria</u>

On call schedule is Monday-Thursday 4:30p-6:30a, Friday 4:30p-Monday 6:30a.

Limited to the following studies:

1. GI Bleed
2. HIDA (no CCK)
3. V/Q scan in high risk patients (i.e. prior contrast adverse event and pregnant patients)
4. Brain death scintigraphy

Any other exams ordered during "on call" will require prior approval by the radiology resident and attending radiologist.

<u>Resources</u>

1. RadPrimer
    a. Username and password from program coordinator
    b. Includes:
        i. Detailed and repetitive bullet points of topics at basic and intermediate levels
        ii. Lots of pictures
        iii. Practice questions (predominantly first level)
        iv. Does take a long time to go through
        v. Progress can be tracked by program director
2. Statdx
    a. Same username and password as RadPrimer
    b. Basically uptodate for radiology
    c. Includes:
        i. Common imaging characteristics for lesions/disease for multiple modalities
        ii. Pictures
        iii. Differential diagnosis
        iv. What to do next
3. RAM Physics Review course

<u>Recommended Reading List</u>

1. R1:
    a. Brandt/Helms
    b. The Requisites: ER
    c. ER Case Files
    d. Practical Fluoroscopy of GI/GU Tracts
    e. MSK Case Review
    f. Fundamentals of Body CT
    g. MRI Duke Review
2. R2:
    a. The Requisites: Ultrasound
    b. The Requisites: Cardiac
    c. Essentials of Nuclear Medicine
    d. Essentials of Breast Imaging
    e. Essentials of Chest
    f. The Requisites: IR
    g. GI Case Review
    h. Chest Case Review
    i. Helms MSK MRI
    j. The Requisites: GI
    k. The Requisites: Neuroradiology

<u>Reimbursement</u>

1. See Resident House Manual for Personal Development Funds per year.
2. $2500 for AIRP travel, room, and board expenses.
3. Reimbursement for RAM Physics conference and AOCR conference submitted to GME.
4. In final year of training, may receive up to $1000 for travel, room, and board expenses while taking the board examination.
5. All receipts must be submitted within 30 days.

<u>Case Logs</u>

1. Log of all resident procedures and dictations can be found on Powerscribe.
2. Residents' case logs must be submitted annually to the ACGME and/or AOCR (if appropriate depending on point in transition to ACGME).
    a. AOCR case logs are submitted by the resident. The AOCR contacts each individual resident at the end of the year regarding this submission.
    b. ACGME case logs are submitted by the program director.

Patients' Bill of Rights

As a patient in a hospital in New York State, you have the right, consistent with law, to:

(1) Understand and use these rights. If for any reason you do not understand or you need help, the hospital MUST provide assistance, including an interpreter.

(2) Receive treatment without discrimination as to race, color, religion, sex, national origin, disability, sexual orientation, source of payment, or age.

(3) Receive considerate and respectful care in a clean and safe environment free of unnecessary restraints.

(4) Receive emergency care if you need it.

(5) Be informed of the name and position of the doctor who will be in charge of your care in the hospital.

(6) Know the names, positions and functions of any hospital staff involved in your care and refuse their treatment, examination or observation.

(7) A no smoking room.

(8) Receive complete information about your diagnosis, treatment and prognosis.

(9) Receive all the information that you need to give informed consent for any proposed procedure or treatment. This information shall include the possible risks and benefits of the procedure or treatment.

(10) Receive all the information you need to give informed consent for an order not to resuscitate. You also have the right to designate an individual to give this consent for you if you are too ill to do so. If you would like additional information, please ask for a copy of the pamphlet "Deciding About Health Care- A Guide for Patients and Families."

(11) Refuse treatment and be told what effect this may have on your health.

(12) Refuse to take part in research. In deciding whether or not to participate, you have the right to a full explanation.

(13) Privacy while in the hospital and confidentiality of all information and records regarding your care.

(14) Participate in all decisions about your treatment and discharge from the hospital. The hospital must provide you with a written discharge plan and written description of how you can appeal your discharge.

(15) Review your medical record without charge. Obtain a copy of your medical record for which the hospital can charge a reasonable fee. You cannot be denied a copy solely because you cannot afford to pay.

(16) Receive an itemized bill and explanation of all charges.

(17) Complain without fear of reprisals about the care and services you are receiving and to have the hospital respond to you and if you request it, a written response. If you are not satisfied with the hospital's response, you can complain to the New York State Health Department. The hospital must provide you with the State Health Department telephone number.

(18) Authorize those family members and other adults who will be given priority to visit consistent with your ability to receive visitors.

(19) Make known your wishes in regard to anatomical gifts. You may document your wishes in your health care proxy or on a donor card, available from the hospital.

/ Public Health Law(PHL)2803 (l)(g)Patient's Rights, lONYCRR, 405.7,405.7(a)(l),405.7(c)