

## INTRODUCTION:

The goal of Emergency Radiology/ Night float rotation is for the resident to become proficient in interpretation of all aspects of radiology, with particular emphasis to trauma and acute/emergency conditions encountered on call. On-going and advancing increase in integration of radiology knowledge, improved triage and radiology consultation skills, call independence, as well as overall efficiency will be expected with each progressive rotation.

ER Night float rotations will occur in the second through fourth year of Radiology residency, PGY3 to PGY5, after successful completion of the first year of radiology residency. A pre-call examination and a pre-set number of buddy calls will be completed towards the end of the first year of radiology residency (PGYII). The ER/night float rotation will include three separate sessions of two consecutive week night float rotations, as well as a number of individual Friday and Saturday nights.

## **ED/TRAUMA CORE CURRICULUM**

### **MUSCULOSKELETAL TOPICS (4 LECTURES)**

#### **1. Pelvic and Hip Trauma**

- Review pelvic anatomy pertinent to radiology and pelvic trauma
- Outline the Young-Burgess classification of pelvic fractures
- Identify common avulsive injuries in the pelvis and common hip injuries

#### **2. Upper Extremity Trauma**

- Role of various imaging modalities in diagnosing upper extremity trauma
- Elucidate most common injuries and imaging findings for injuries in the upper extremity

#### **3. Lower Extremity Trauma**

- Role of various imaging modalities in diagnosing lower extremity trauma
- Most common injuries and imaging findings for injuries in the lower extremity
- Identify cases of instability and various treatment options

#### **4. Musculoskeletal Infection in the ED**

- Provide spectrum of most common MSK infections
- Elucidate role of imaging modalities in diagnosing MSK infections
- Describe x-ray, CT, and US imaging findings in most common MSK infections
- Describe indications and technique for MSK procedures in aspirating joints

### **THORACIC TOPICS (3 LECTURES)**

#### **1. Acute Aortic Syndrome**

- Define Acute Aortic Syndrome
- Identify workup of Acute Aortic Syndrome with various imaging modalities
- Imaging findings of aortic dissection, intramural hematoma, and penetrating atherosclerotic ulcer
- Elucidate differences in type A and type B dissection
- Elaborate on aneurysms, aortitis and thromboembolic disease
- Discuss indications for various treatments

#### **2. Thoracic Non Vascular Trauma**

- Indication for radiography, CT, CTA, and MRI in thoracic non vascular trauma
- Define pneumomediastinum, pneumopericardium, pneumothorax, and causes
- Imaging findings of esophageal perforation, esophageal injury, and traumatic injury to airway

#### **3. Thoracic Emergencies**

- Indications for radiography, CT, CTA, and MRI in thoracic emergencies
- Imaging findings and differential diagnoses of Pulmonary Embolism, ARDS, and pulmonary infections encountered most commonly in the ED
- Define common complications of PE (heart strain, right heart failure)
- Describe imaging findings of foreign body aspiration, toxin ingestion

### **BODY TOPICS (5 LECTURES)**

#### **1. Acute Abdomen Series:**

- Imaging findings of pneumatosis, portal and mesenteric venous gas
- Imaging findings of gastric volvulus (organoaxial vs. mesenteroaxial)
- Imaging findings of small bowel ischemia, malrotation, and volvulus
- Imaging findings of ischemic colitis, cecal volvulus, and sigmoid volvulus
- Differential diagnoses for various causes of obstruction
- Discuss and identify most common inflammatory conditions
- Imaging findings of gastritis, duodenitis, inflammatory bowel disease, appendicitis, colonic diverticulitis and proctitis
- Potential complications of common inflammatory conditions

#### **2. Bowel Injury/Trauma**

- Role of radiography, fluoroscopy, and CT in diagnosing bowel trauma

- Imaging findings of partial thickness and full thickness bowel wall injury
- Complications and associations of bowel injury/perforation (Chance fracture and bowel contusions).

### **3. Genitourinary Trauma**

- Discuss role of imaging modalities in diagnosing various GU emergencies and trauma (radiography vs. CT vs. ultrasound vs. RUG)
- Imaging findings of renal contusion, laceration, subcapsular hematoma, intraperitoneal and extraperitoneal bladder rupture
- Identify treatment options for above conditions

### **4. Genitourinary Emergencies**

- Discuss imaging findings of acute male non traumatic GU pathology- orchitis, testicular torsion, infarction
- Discuss imaging findings of acute female non-traumatic GU pathology- ectopic pregnancy, PID, and ovarian torsion.
- Identify treatment options for above conditions

### **5. Hepatic, Splenic, and Pancreatic Trauma**

- Imaging findings of hepatic trauma and AAST grading system- contusion, laceration, pseudoaneurysm, and active hemorrhage
- Imaging findings, complications, and AAST grading of splenic trauma- contusion, laceration, subcapsular hematoma, pseudoaneurysm and active hemorrhage
- Imaging findings of pancreatic trauma- contusion, laceration, ductal injury
- Identify need to order more advanced imaging (i.e. MRCP in setting of pancreatic ductal injury)

## **NEURO TOPICS (6 LECTURES)**

### **1. Cerebral Trauma and Emergencies**

- Discuss location, causes, and imaging findings of intracranial hemorrhage (epidural, subdural, subarachnoid, intraventricular, cisternal, parenchymal)
- Discuss imaging findings in diffuse cerebral edema and various cerebral herniations

### **2. Craniofacial Trauma**

- Clarify differences in various patterns in craniofacial trauma (calvarial fractures, facial fractures, Le fort fractures, NOE fractures, ZMC complex fractures, nasal bone, orbital wall blow out and blow in fractures)
- Discuss differences between orbital fractures, mandibular fractures, skull base fractures, and temporal bone fractures- longitudinal and transverse

### **3. Cervical Spine Trauma**

- Define basic measurements to determine if cervical spine injury has occurred
- Elucidate role of imaging modalities in diagnosis of cervical spine injury
- Characterize c spine injury by mechanism and imaging findings

#### **4. Spinal Trauma and Emergencies**

- Discuss most common injury patterns and mechanisms in the cervical, thoracic, and lumbar spine (ligament injury, cord injury, hematoma, hemorrhage)
- Role of modalities, imaging findings, and causes of cord compression (masses, tumors, disc disease)
- Clarify imaging findings and differential diagnosis of spinal infections (discitis/osteomyelitis, transverse myelitis, arachnoiditis, subdural empyema)
- Discuss relevant anatomy and imaging findings of cord infarct

#### **5. Cerebral Emergencies: Infections, Toxins**

- Elucidate imaging findings of intracranial infections (encephalitis, meningitis, cerebritis, epidural abscess, subdural empyema)
- Briefly elaborate on toxic encephalopathy (CO, drugs, narcotic inhalation, alcohol, anoxic injury etc.)

#### **6. Head and Neck Infection**

- Outline various anatomic spaces in the neck (submandibular, carotid, parapharyngeal, pharyngeal, parotid, prevertebral spaces)
- Elaborate on orbital infections- preseptal/postseptal cellulitis, subperiosteal abscess, lacrimal adenitis, optic neuritis, pseudotumor
- Elucidate sinus infections- sinusitis, fungal infection, osteomyelitis
- Clarify imaging findings in skull base/temporal bone infections- otitis externa, petrous apicitis, mastoiditis, labyrinthitis, and osteomyelitis
- Discuss imaging findings of oral cavity infections- odontogenic infection, tonsillitis, adenoiditis, and peritonsillar/retropharyngeal abscess

### **Goals and Objectives ER/ Night Float Rotation 1:**

#### **Patient Care**

Resident expectations include:

- Provide patient-focused care for each patient by ensuring the most appropriate study is obtained and interpreted efficiently with ongoing communication to the care team.
- Demonstrate professional, compassionate and respectful conduct during interactions with patients and their families.
- Research and understand the clinical history, signs & symptoms and physical exam findings, particularly, the information related to the imaging request and/or procedure.
- Review prior imaging studies and their indications and use it to provide patient specific recommendations on the most appropriate study for the clinical indication requested.
- Understand and provide patient specific risks, benefits and

alternatives in the emergency setting for all imaging studies and procedures.

- Be familiar with and available to counsel patients and/or their care providers on the indications, contraindications, risks, benefits and alternatives to use of iodinated contrast, oral contrast and gadolinium, particularly in the emergency setting.
- Obtain informed consent when and if needed after adequate patient and patient family counseling.
- Maintain continuity of care with appropriate sign-out of scheduled, ongoing, or communication of completed studies, procedures or care for specific patients studies or issues to the oncoming resident.

#### Assessment:

- Overall faculty evaluations
- Other 360 evaluations including those from fellow residents, technologists, medical students
- Patient and patient family feedback and evaluations

#### Medical Knowledge:

##### Resident expectations include:

- Comprehend the basic principles of radiography, CT, MR, U/S, and nuclear and interventional radiology.
- Review study indications, consult with ordering provider when indicated and tailor study protocol to specific disease processes to optimize results.
- Recognize image artifacts, learn adjusting parameters and work with the technologists to optimize image quality.
- Be acquainted with normal cross-sectional anatomy and radiographic manifestations of common disease entities, particularly those encountered in the emergency setting.
- Accurately and efficiently interpret radiographic studies in the emergency setting based on prior knowledge and experience acquired during core rotations (body, neuroradiology, chest, musculoskeletal, nuclear medicine, ultrasound, interventional radiology) and across all modalities.
- Understand the indications and uses of contrast material and the pre-medication protocol for IV contrast and eligible patients.
- Be familiar with the treatment of contrast infiltrations and contrast reactions, in particular, recognize anaphylactic reactions, access and use of a code cart, and how to call a code when necessary.
- Know the clinical indications for on-call emergent radiologic procedures, perform them independently or with minimal supervision, and communicate results to ordering provider.
- Utilize CIS to obtain relevant to clinical information, ensure old studies are

- available and reviewed. For procedures and informed consent, also interview and examine patients as needed.
- Dictate accurate and concise radiology reports with appropriate findings, pertinent positives and negatives, differential and recommendations as indicated.
  - Integrate overall knowledge from core rotations, conferences, call and individual study to discuss cases with consulting services.

#### Assessment:

- Overall faculty evaluations
- Other 360 evaluations including those from fellow residents, technologists, medical students
- ACR In-service
- Annual resident grand round presentations.

#### Practice-Based Learning and Improvement:

##### Resident expectations include:

- Review, evaluate, and integrate evidence from well-researched scientific studies to improve overall quality of patient care provided.
- Learn apply knowledge of study designs and statistical methods critically evaluate clinical studies and all other information on the diagnostic effectiveness of radiologic examination and procedures.
- Demonstrate knowledge and use of medical informatics in patient care and education.
- Use information technology to manage information, access on-line medical information, and become familiar with and use appropriate online resources to augment learning and overall education.
- Use on-call cases to improve personal learning and as a resource to facilitate the learning of fellow residents and medical students through teaching.
- Maintain a procedure log that also includes on call emergent procedures.
- Regularly review radiology journals and consider potential gaps in the literature and consider potential topics of research.

#### Assessment:

- Overall faculty evaluations
- Other 360 evaluations including those from fellow residents, technologists, medical students
- ACR In-service

#### Interpersonal and Communication Skills:

##### Resident expectations include:

- Communicate professionally, clearly and effectively with other health care

providers, including technologists, ancillary staff, medical students, and other supporting medical personnel.

- Interact appropriately and clearly with patients and their family members, for example by greeting them appropriately, introducing yourself and your role/position, explaining the examination or procedure to be performed, and allowing them an opportunity to ask questions.
- Provide radiology consults and obtain informed consent with applicable discussion of indications, risks, benefits and alternatives to the procedure and/or study and discuss results when indicated or requested.
- Provide patient focused care as part of the team by working seamlessly with the ordering providers including effective communication and documentation of cases via timely concise and informative radiology reports.
- Communicate findings effectively with the referring clinicians, with emphasis on communication and documentation of critical findings in a timely fashion to ensure initiation of prompt emergent care.
- Be available for immediate review of scans for critical patients at the scanner and for those that require monitoring and/or additional views.
- Provide quick emergent image consults for transfer patients, trauma or critically ill patients for consulting services and for educational review with the clinical team as requested.

#### Assessment:

- Overall Faculty Evaluations
- Other 360 evaluations including those from consulting services, fellow residents, radiology technologists, medical students.
- Patient and patient family feedback and evaluations

#### Professionalism:

##### Resident expectations include:

- Treat all patients and their families with respect, compassion and understanding, particularly during difficult circumstances, which may arise given the high stress of emergency related accidents and conditions.
- Demonstrate sensitivity to patient diversity with awareness and respect of differences in culture, age, gender and all disabilities.
- Maintain an appropriate and professional demeanor and communicate clearly with fellow colleagues from consulting services, especially when there may be a difference of opinion on the course of clinical care.
- Be punctual, work efficiently and ensure that all pending work and required sign-off is completed at the end of the call shift.
- Review and maintain the appropriate dress code and grooming.
- Become a role model and teacher for other radiology residents and rotating medical students.
- Illustrate commitment to ongoing education development by reviewing and learning from interesting/unique call cases as well as sharing the cases with

- fellow residents.
- Become an ambassador for Radiology to fellow residents and colleagues from other departments.
- Be aware of and apply ethical principles pertaining to clinical care, patient confidentiality, informed consent and medical research.

#### Assessment:

- Overall Faculty Evaluations
- Other 360 evaluations including those from consulting services, fellow residents, radiology technologists, medical students.

#### Systems-Based Practice:

##### Resident expectations:

- Understand how our service and professional practice affects the patients, their families, other health care professionals, the health care organization, and the larger society in general.
- Learn to effectively triage and manage the general work-list stat/overnight studies and efficiently provide complete and accurate imaging reports in a timely manner while addressing all other on-call responsibilities such as emergent consults and study protocols.
- Assist referring clinicians to provide cost-effective health care and resource allocation for all patients in a manner that does not compromise the quality of care provided.
- Become familiar with related costs and learn to also evaluate the imaging requests with regards cost in addition to effectiveness, and appropriateness.
- Be ready to suggest and facilitate performance of an alternative study if and when indicated.
- Triage stat requests for ultrasounds and procedures accordingly to determine which need to be performed immediately and which could be deferred and performed after more urgent studies are addressed.
- Review all interpreted examinations and procedures with the attending as needed during and at the end of the shift prior.
- Review and ensure that all performed studies are accounted for and assigned accordingly to ensure complete and timely care for all patients.
- Become familiar with the ACR Appropriateness Criteria.

#### Assessment:

- Overall Faculty Evaluations
- Other 360 evaluations including those from consulting services, fellow residents, radiology technologists, medical students.
- Patient and patient family feedback and evaluations



## Goals and Objectives ER/ Night Float Rotation 2:

### Patient Care

#### Resident expectations include:

- Deliver patient-focused care for all patients and ensure the most appropriate study is obtained and interpreted efficiently with ongoing communication to the care team.
- Demonstrate professional, compassionate and respectful conduct during interactions with patients and their families.
- Conduct relevant and focused research as well as understand the clinical history, signs & symptoms and physical exam findings related to the imaging request and/or procedure.
- Consistently review prior imaging studies and their indications to provide patient specific recommendations on the most appropriate study for the clinical indication requested.
- Understand and provide patient specific risks, benefits and alternatives in the emergency setting for all imaging studies and procedures.
- Understand and be available to counsel patients and/or their care providers on the indications, contraindications, risks, benefits and alternatives to use of iodinated contrast, oral contrast and gadolinium, particularly in the emergency setting.
- Obtain informed consent when and if needed after adequate patient and patient family counseling.
- Maintain continuity of care with appropriate sign-out of scheduled, ongoing, or communication of completed studies, procedures or care for specific patients studies or issues to the oncoming resident.

#### Assessment:

- Overall faculty evaluations
- Other 360 evaluations including those from fellow residents, technologists, medical students
- Patient and patient family feedback and evaluations

### Medical Knowledge:

### Resident expectations include:

- Understand the principles of radiography, CT, MR, U/S, and nuclear and interventional radiology.
- Review all study indications and consult with ordering provider as needed in order to tailor study protocols to optimize results.
- Understand image artifacts, learn adjusting parameters and work with the technologists to optimize image quality.
- Be familiar with variations of normal cross-sectional anatomy and radiographic manifestations of common disease entities.
- Progressive increase in accuracy and efficiency of interpreting radiographic studies in the emergency setting based on prior knowledge and experience acquired during core rotations and across all modalities as well as prior on call experience.
- Know the indications and uses of contrast material and the pre-medication protocol for IV contrast and eligible patients.
- Know the treatment of contrast infiltrations and contrast reactions, in particular, recognize anaphylactic reactions, access and use of a code cart, and how to call a code when necessary.
- Know and implement the clinical indications for on-call emergent radiologic procedures, perform them independently or with minimal supervision, and communicate results to ordering provider.
- Utilize CIS to obtain relevant to clinical information, ensure old studies are available and reviewed. For procedures and informed consent, also interview and examine patients as needed.
- Dictate accurate and concise radiology reports with appropriate findings, pertinent positives and negatives, differential and recommendations as indicated in a timely manner.
- Continue to integrate overall knowledge from core rotations, conferences, call and individual study to discuss cases with consulting services.

### Assessment:

- Overall faculty evaluations
- Other 360 evaluations including those from fellow residents, technologists, medical students
- ACR In-service
- Annual resident grand round presentations.

### Practice-Based Learning and Improvement:

#### Resident expectations include:

- Review, evaluate, and integrate evidence from well-researched scientific studies to improve overall quality of patient care provided.
- Continue to learn to apply knowledge of study designs and statistical methods critically evaluate clinical studies and all other information on the diagnostic effectiveness of radiologic examination and procedures.

- Use knowledge of medical informatics in patient care and education.
- Continue to use information technology to manage information, access on-line medical information, and become familiar with and use appropriate online resources to augment learning and overall education.
- Continue to use on-call cases to improve personal learning and as a resource to facilitate the learning of fellow residents and medical students through teaching.
- Maintain a procedure log that also includes On-Call emergent procedures.
- Regularly review radiology and relevant medical journals and stay up-to-date with current recommendations.
- Critically evaluate current research and as well as potential gaps as future topics of research.

#### Assessment:

- Overall faculty evaluations
- Other 360 evaluations including those from fellow residents, technologists, medical students
- ACR In-service
- Quality improvement and other research projects

#### Interpersonal and Communication Skills:

##### Resident expectations include:

- Consistently communicate professionally, clearly and effectively with other health care providers, including technologists, ancillary staff, medical students, and other supporting medical personnel.
- Model appropriate patient and patient family interaction, for example by greeting them appropriately, introducing yourself and your role/position, explaining the examination or procedure to be performed, and allowing them an opportunity to ask questions.
- Provide improved and targeted radiology consults and obtain informed consent with applicable discussion of indications, risks, benefits and alternatives to the procedure and/or study and discuss results when indicated or requested.
- Demonstrate patient focused care as part of the team by working seamlessly with the ordering providers including effective communication and documentation of cases via timely concise and informative radiology reports.
- Improve communication with referring clinicians, especially regarding the communication and documentation of critical findings to ensure initiation of prompt emergent care.
- Become a radiology ambassador by being readily available for immediate review of scans for critical patients at the scanner and for those that require monitoring and/or additional views.
- Be available and deliver emergent image consults for transfer patients,

trauma or critically ill patients for consulting services and for educational review with the clinical team as requested.

#### Assessment:

- Overall Faculty Evaluations
- Other 360 evaluations including those from consulting services, fellow residents, radiology technologists, medical students.
- Patient and patient family feedback and evaluations

#### Professionalism:

##### Resident expectations include:

- Treat all patients and their families with respect, compassion and understanding, particularly during difficult circumstances, which may arise given the high stress of emergency related accidents and conditions.
- Demonstrate sensitivity to patient diversity with awareness and respect of differences in culture, age, gender and all disabilities.
- Maintain an appropriate and professional demeanor and communicate clearly with fellow colleagues from consulting services, especially when there may be a difference of opinion on the course of clinical care.
- Be punctual, work efficiently and ensure that all pending work and required sign-off is completed at the end of the call shift.
- Review and maintain the appropriate dress code and grooming.
- Be a role model and teacher for other radiology residents and rotating medical students.
- Continue to commit to ongoing education development by reviewing and learning from interesting/unique call cases as well as sharing the cases with fellow residents.
- Be an ambassador for Radiology to fellow residents and colleagues from other departments.
- Understand and apply ethical principles pertaining to clinical care, patient confidentiality, informed consent and medical research.

#### Assessment:

- Overall Faculty Evaluations
- Other 360 evaluations including those from consulting services, fellow residents, radiology technologists, medical students.

#### Systems-Based Practice:

##### Resident expectations:

- Understand how the radiology service and professional practice affects the patients, their families, other health care professionals, the health care organization, and the larger society in general.
- Effectively triage and manage the general work-list stat/overnight studies

and efficiently provide complete and accurate imaging reports in a timely manner while addressing all other on-call responsibilities such as emergent consults and study protocols.

- Assist referring clinicians to provide cost-effective health care and resource allocation for all patients in a manner that does not compromise the quality of care provided.
- Understand related costs and learn to also evaluate the imaging requests with regards cost in addition to effectiveness, and appropriateness.
- Be ready to confidently suggest and facilitate performance of an alternative study if and when indicated.
- Triage stat requests for ultrasounds and procedures accordingly to determine which need to be performed immediately and which could be deferred and performed after more urgent studies are addressed.
- Review all interpreted examinations and procedures with the attending as needed during and at the end of the shift.
- Review and ensure that all performed studies are accounted for and assigned accordingly to ensure complete and timely care for all patients.
- Become familiar with the ACR Appropriateness Criteria.

#### Assessment:

- Overall Faculty Evaluations
- Other 360 evaluations including those from consulting services, fellow residents, radiology technologists, medical students.
- Patient and patient family feedback and evaluations

### **Goals and Objectives ER/ Night Float Rotation 3:**

#### Patient Care

##### Resident expectations include:

- Provide and model patient-focused care for each patient by ensuring the most appropriate study is obtained and interpreted efficiently with ongoing communication to the care team.
- Always demonstrate professional, compassionate and respectful conduct during interactions with patients and their families.
- Consistently research and understand the clinical history, signs & symptoms and physical exam findings, particularly, the information related to the imaging request and/or procedure.
- Consistently review prior imaging studies and their indications to provide patient specific recommendations on the most appropriate study for the clinical indication requested.

- Understand and provide patient specific risks, benefits and alternatives in the emergency setting for all imaging studies and procedures.
- Be available to counsel patients and/or their care providers on the indications, contraindications, risks, benefits and alternatives to use of iodinated contrast, oral contrast and gadolinium, particularly in the emergency setting.
- Obtain informed consent when and if needed after adequate patient and patient family counseling.
- Maintain continuity of care with appropriate sign-out of scheduled, ongoing, or communication of completed studies, procedures or care for specific patients studies or issues to the oncoming resident.

#### Assessment:

- Overall faculty evaluations
- Other 360 evaluations including those from fellow residents, technologists, medical students
- Patient and patient family feedback and evaluations

#### Medical Knowledge:

##### Resident expectations include:

- Understand the principles of radiography, CT, MR, U/S, and nuclear and interventional radiology.
- Always review study indications, consult with ordering provider when indicated and tailor study protocol to specific disease processes to optimize results.
- Recognize image artifacts and use various adjusting parameters with the technologists to optimize image quality.
- Be familiar with normal and normal variants of cross-sectional anatomy as well as radiographic manifestations of common disease entities, particularly those encountered in the emergency setting.
- Become proficient in accurate and efficient interpretation of radiographic studies in the emergency setting based on prior knowledge and experience acquired during core rotations as well as prior on call experience.
- Be familiar with the indications and uses of contrast material and the pre-medication protocol for IV contrast and eligible patients.
- Become proficient in the treatment of contrast infiltrations and contrast reactions, in particular, recognize anaphylactic reactions, access and use of a code cart, and how to call a code when necessary.
- Understand and implement the clinical indications for on-call emergent radiologic procedures, perform them independently and communicate results to ordering provider.

- Utilize CIS to obtain relevant to clinical information, ensure old studies are available and reviewed. For procedures and informed consent, also interview and examine patients as needed.
- Efficiently dictate accurate and concise radiology reports with appropriate findings, pertinent positives and negatives, differential and recommendations as indicated in a timely manner.
- Integrate overall knowledge from core rotations, conferences, call and individual study to discuss cases with consulting services.

#### Assessment:

- Overall faculty evaluations
- Other 360 evaluations including those from fellow residents, technologists, medical students
- ACR In-service
- Annual resident grand round presentations.

#### Practice-Based Learning and Improvement:

##### Resident expectations include:

- Review, evaluate, and integrate evidence from well-researched scientific studies to improve overall quality of patient care provided.
- Continue to learn to apply knowledge of study designs and statistical methods critically evaluate clinical studies and all other information on the diagnostic effectiveness of radiologic examination and procedures.
- Use knowledge of and understand medical informatics in patient care and education.
- Continue to use information technology to manage information, access on-line medical information, and become familiar with and use appropriate online resources to augment learning and overall education.
- Continue to use on-call cases to improve personal learning and as a resource to facilitate the learning of fellow residents and medical students through teaching.
- Maintain a procedure log that also includes on call emergent procedures.
- Regularly review radiology journals and other relevant medical journals.
- Be familiar with current recommendations and use in practice.

#### Assessment:

- Overall faculty evaluations
- Other 360 evaluations including those from fellow residents, technologists, medical students
- ACR In-service

#### Interpersonal and Communication Skills:

##### Resident expectations include:

- Always communicate professionally, clearly and effectively with other health care providers, including technologists, ancillary staff, medical students, and other supporting medical personnel.
- Demonstrate appropriate interaction with patients and their families and act as a role model to junior residents.
- Provide accurate and targeted radiology consults.
- Obtain informed consent with applicable discussion of indications, risks, benefits and alternatives to the procedure and/or study and discuss results when indicated or requested.
- Work seamlessly with ordering providers to help provide patient focused care as part of the team including effective communication with timely, concise and informative radiology reports.
- Communicate findings effectively with the referring clinicians, with emphasis on communication and documentation of critical findings in a timely fashion to ensure initiation of prompt emergent care.
- Be readily available for immediate review of scans for critical patients at the scanner and for those that require monitoring and/or additional views.
- Provide expert accurate emergent image consults for transfer patients, trauma or critically ill patients for consulting services and for educational review with the clinical team as requested.

#### Assessment:

- Overall Faculty Evaluations
- Other 360 evaluations including those from consulting services, fellow residents, radiology technologists, medical students.
- Patient and patient family feedback and evaluations

#### Professionalism:

##### Resident expectations include:

- Always treat all patients and their families with respect, compassion and understanding, particularly during difficult circumstances, which may arise given the high stress of emergency related accidents and conditions.
- Consistently demonstrate sensitivity to patient diversity with awareness and respect of differences in culture, age, gender and all disabilities.
- Maintain an appropriate and professional demeanor and communicate clearly with fellow colleagues from consulting services, especially when there may be a difference of opinion on the course of clinical care.
- Always be punctual, work efficiently and ensure that all pending work and required sign-off is completed at the end of the call shift.
- Maintain the appropriate dress code and grooming.
- Be a role model and teacher for other radiology residents and rotating medical students.
- Demonstrate continued commitment to ongoing education development.
- Be an ambassador for Radiology to fellow residents and colleagues from



- other departments.
- Apply ethical principles pertaining to clinical care, patient confidentiality, informed consent and medical research.

#### Assessment:

- Overall Faculty Evaluations
- Other 360 evaluations including those from consulting services, fellow residents, radiology technologists, medical students.

#### Systems-Based Practice:

##### Resident expectations:

- Be aware of the impact of the radiology service and professional practice and its effect on the patients, their families, other health care professionals, the health care organization, and the larger society in general.
- Effectively and independently triage and manage the general work-list stat/overnight studies and efficiently provide complete and accurate imaging reports in a timely manner while addressing all other on-call responsibilities such as emergent consults and study protocols.
- Assist referring clinicians to provide cost-effective health care and resource allocation for all patients in a manner that does not compromise the quality of care provided.
- Understand related costs and learn to also evaluate the imaging requests with regards cost in addition to effectiveness, and appropriateness.
- Confidently suggest and facilitate performance of an alternative study if and when indicated.
- Perfect triage skills with regard to on-call procedures such as ultrasounds accordingly to determine which need to be performed immediately and which could be deferred and performed after more urgent studies are addressed.
- Review all interpreted examinations and procedures with the attending as needed during and at the end of the shift.
- Ensure that all performed studies are accounted for and assigned accordingly to ensure complete and timely care for all patients.
- Become familiar with and utilize the ACR Appropriateness Criteria.

##### Assessment:

- Overall Faculty Evaluations
- Other 360 evaluations including those from consulting services, fellow residents, radiology technologists, medical students.
- Patient and patient family feedback and evaluations.