Adapted from: American College of Radiology/Society of Breast Imaging Curriculum for Resident and Fellow Education in Breast Imaging (Sickles et al)

The goal of residency training in breast imaging is for residents to be fully prepared to become the interpreting physician in any breast imaging facility, without the need for additional training.

Residency training must involve a minimum of 12 full-time-equivalent weeks of clinical training in breast imaging during the entire 4-year residency. The initial month of breast imaging training is in the second year of residency. The last month of breast imaging training is given in the last 12 months of residency, to meet the MQSA initial-experience requirement for the direct supervision of at least 240 mammography interpretations in a 6 month period during the last 2 years of residency.

By means of lectures, textbooks, syllabi, journal reprints, video-links, teaching files, and other teaching materials, a resident will become familiar with and understand the following topics:

BREAST ANATOMY, PHYSIOLOGY, AND PATHOLOGY

- Breast development
- Normal breast anatomy and histology; alteration with age, pregnancy, menstrual cycle, and hormonal effects; male breast anatomy
- Pathologic appearance and clinical significance of
  - Benign breast lesions
  - Atypical ductal hyperplasia, atypical lobular hyperplasia, lobular carcinoma in situ, and other histologic risk factors
  - Ductal carcinoma in situ, including its histologic subtypes
  - Invasive ductal carcinoma not otherwise specified; subtypes of invasive ductal carcinoma (mucinous, medullary, papillary, tubular); invasive lobular carcinoma
  - Other types of breast cancer, such as Paget’s disease and inflammatory carcinoma
  - Other malignancies involving the breast, including phyllodes tumor, lymphoma, leukemia, sarcomas, and metastases
- Histologic grading
- Pathologic staging
- Multifocal and multicentric carcinoma
- Margin analysis for specimens containing malignancy

EPIDEMIOLOGY

- Risk factors for breast cancer
  - Indications for genetic screening
• Breast cancer incidence and mortality, including longitudinal trends
• Breast cancer staging and survival rates by stage

MAMMOGRAPHIC EQUIPMENT AND TECHNIQUE

• Screen-film, full-field digital mammography and digital breast tomosynthesis
• Features of dedicated mammographic units, including target, filtration, automatic exposure control, and grids
• Factors affecting optical density, contrast, sharpness, and noise
• Selection of technique factors, including effects of milliampere-seconds, kilovolt peak, target and filter material choice, and density settings on image quality and radiation dose
• Rationale for breast compression
• Clinical image assessment for proper breast positioning, compression, exposure, contrast, sharpness, and noise
• Full-field digital mammography
  o Characteristics of full-field digital mammographic systems, including advantages and limitations
  o Effects of post-processing on the digital mammographic image
  o Effect of signal-to-noise ratio on radiation dose
  o Dedicated high-luminance, high-resolution viewing monitors
  o ACR Practice Guideline for the Performance of Whole Breast Digital Mammography
• Digital Breast Tomosynthesis
  o Characteristics of DBT systems, including advantages and limitations
  o Advantages and disadvantages of different DBT systems
  o Awareness of sweep angle, #source exposures, reconstruction algorithms of different DBT platforms.
  o Radiation dose considerations specific to DBT.

MAMMOGRAPHY QUALITY ASSURANCE

• Familiarity with content in the ACR Mammography Quality Control Manual
• Purpose and frequency of performance of quality control tests performed by the technologist and physicist
• Demonstrate proficiency in recognizing the mammographic appearance of artifacts for both screen-film and DBT
• Regulation
  o Equipment, quality control, and personnel (radiologist, technologist, physicist) requirements for ACR accreditation and MQSA certification
  o Responsibilities of the lead interpreting physician
• Medical audit
  o Audit definitions as provided by BI-RADS®
Desirable goals and benchmarks for standard outcome parameters, for both screening and diagnostic mammography

Auditing requirements for MQSA certification

MAMMOGRAPHIC INTERPRETATION

- Optimal viewing conditions, including a low ambient light environment
- Demonstrate proficiency in
  - Recognizing normal mammographic anatomy
  - Recognizing the mammographic features of characteristically benign and suspicious breast calcifications
  - Recognizing the mammographic features of characteristically benign and suspicious breast masses
  - Recognizing the mammographic appearance of indirect signs of malignancy (architectural distortion, asymmetries, etc.)
  - Recognizing the mammographic features of the surgically altered breast, including implants
  - Recognizing the mammographic features of probably benign (BI-RADS® category 3) lesions
  - Principles, methods, strengths, and pitfalls of computer-aided detection and double reading
- ACR Bi-RADS Lexicon and terminology using the BI-RADS® 2013 criteria
  - Understand the meaning of the BI-RADS categories
  - Apply the appropriate terminology to calcifications, masses, asymmetries and other lesions

SCREENING MAMMOGRAPHY

- Randomized clinical trials, case-control studies, service-screening studies: purpose, methods, results
- Pitfalls in evaluating screening results: lead-time bias, length-bias sampling, selection bias, prevalence vs incidence screening, interval cancer rate, survival rates
- Relative screening efficacy of clinical breast examination, breast self-examination, and mammography
- Benefit-risk assessment, including radiation risk and false-positive results
- Cost-effectiveness
- Controversies regarding
  - Screening of any age range
  - screening women aged 40 to 49 years;
  - screening women aged >70 years
  - periodicity (frequency) of screening: yearly vs. biennial
  - Screening guidelines of the ACR, the American Cancer Society, the National Cancer Institute, the US Preventive Services Task Force, and others
• Logistics and throughput issues in the performance and interpretation of screening mammography examinations

Reference sources:
• ACR Practice Guideline for the Performance of Screening Mammography

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DIAGNOSTIC (PROBLEM-SOLVING) MAMMOGRAPHY
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• Techniques and indications for, and value of, supplementary mammographic views
• Demonstrate proficiency in:
  o The standard work up for calcifications, asymmetries, architectural distortion, masses and palpable masses.
  o The additional views required for specific lesions such as skin calcifications, lesions outside of the normal field of view
  o Performing the workup of lesions seen on only 1 standard (mediolateral oblique or craniocaudal) screening view
  o Three-dimensional lesion localization
  o Correlation of palpable with imaging findings
  o Evaluation and management of a palpable mass (or other focal symptoms) when there are no associated mammographic findings
  o Assessment of extent of disease for suspicious and for known-malignant lesions
• ACR Practice Guideline for the Performance of Diagnostic Mammography

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BREAST ULTRASOUND
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• Equipment and physical principles
• Techniques
• Indications
• Demonstrate proficiency in
  o Scanning the breast, including breast positioning, image depth and gray scale.
  o Recognizing normal sonographic anatomy
  o Recognizing features of simple cysts, complicated cysts, complex masses
  o Recognizing differential features of benign and malignant solid masses
  o Correlation with findings at mammography and clinical breast examination
• Limitations in the detection and assessment of microcalcifications
• Controversies regarding the role of screening whole-breast ultrasound examination and including Automated Whole Breast US (ABUS)

Reference sources:
• ACR Practice Guideline for the Performance of a Breast Ultrasound Examination
• ACR Breast Ultrasound Accreditation Program

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BREAST MRI
Equipment and physical principles
Techniques
Indications
Strengths and limitations of kinetic and morphologic analysis
Demonstrate proficiency in
  o Recognizing normal MRI anatomy
  o Recognizing differential features of benign and malignant masses
  o Recognizing differential features of benign and malignant non-mass-like enhancement
  o Evaluating implant integrity
  o Correlation with findings at mammography, ultrasound, and clinical breast examination
Limitations in the detection and assessment of lesions presenting as microcalcifications
Controversies regarding the role of screening and staging breast MRI examination

Reference sources:
  • ACR Practice Guideline for the Performance of MRI of the Breast

REPORTING AND MEDICOLEGAL ASPECTS OF BREAST IMAGING

Demonstrate proficiency in producing breast imaging reports, including
  o ACR BI-RADS® lexicon terms for mammography, ultrasound, and MRI
  o Lesion location
  o Categorization of breast composition (BI-RADS® breast density descriptors)
  o Final assessment categories (ACR BI-RADS®; MQSA regulatory requirements)
  o Management recommendations
  o Concordance between lesion descriptors and assessment categories
  o Concordance between assessment categories and management recommendation
MQSA regulatory requirements for reporting mammography results to referring clinician and patient
Medicolegal aspects of all breast imaging and interventional procedures
  o Understanding the supervisory responsibility for approving the technical quality of a given examination
  o Communication issues and follow-up of abnormal findings
  o Informed consent for invasive procedures

INTERVENTIONAL PROCEDURES

Principles, indications and contraindications, equipment, preparation, technique, advantages, disadvantages, accuracy, and auditing for
  o Needle-wire localization guided by mammography and ultrasound
  o Ultrasound-guided core biopsy (also fine-needle aspiration, if available)
o Stereotactically guided core biopsy
o Ultrasound-guided cyst aspiration
o Second-look ultrasound to substitute ultrasound guidance for MRI guidance
o MRI-guided core biopsy and needle-wire localization
o Use and limitations of using markers to indicate the site of percutaneous biopsy
o Specimen radiography, including paraffin block radiography

- Assessment of imaging-pathologic concordance
- Post procedure follow-up imaging

Reference sources:
- ACR Practice Guideline for the Performance of Ultrasound-Guided Breast Interventional Procedures
- ACR Practice Guideline for the Performance of Stereotactically Guided Breast Interventional Procedures
- ACR Ultrasound-Guided Breast Biopsy Accreditation Module (part of the ACR Breast Ultrasound Accreditation Program)
- ACR Stereotactic Breast Biopsy Accreditation Program

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THERAPEUTIC AND MANAGEMENT CONSIDERATIONS

- Basic understanding of breast cancer treatment options
- Role of breast imaging in planning and monitoring of breast cancer treatment and post-treatment follow-up

Reference sources:
- ACR Practice Guideline for the Management of Ductal Carcinoma In-Situ of the Breast
- ACR Practice Guideline for Breast Conservation Therapy in the Management of Invasive Breast Carcinoma
- ACR Appropriateness Criteria™ for breast microcalcifications, nonpalpable breast masses, palpable breast masses, stage I breast carcinoma

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ECONOMICS OF BREAST IMAGING PRACTICE

- Basic understanding of coding and billing
- Revenue positive, revenue neutral, and revenue negative breast imaging examinations
- Strategies to improve the profitability of a breast imaging practice

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OTHER CURRICULUM COMPONENTS

- Minimum of 12 full-time-equivalent weeks of clinical training in breast imaging during 4-year residency; it is recommended that the initial month of breast imaging training be given in the second year of residency, to expose residents to the practice of breast imaging before they are expected to make subspecialty career choices
• Active participation in screening and diagnostic mammography interpretation
• Hands-on performance of breast ultrasound examinations
• Hands-on performance of all interventional breast imaging procedures, especially needle-wire localization and ultrasound-guided core biopsy
• Active participation in breast MRI interpretation
• Formal teaching conferences (lectures, case presentations)
• Imaging-pathologic correlation conferences; also multidisciplinary breast cancer case conferences, if practical
• Direct observation or videotape of mammographic positioning for routine and supplementary views
• Review of teaching file materials especially using computer-based interactive formats
• Breast imaging textbooks available in department or breast imaging section library
• Reprint file or reference library including breast imaging materials
• Log of numbers of mammograms and sonograms interpreted and of procedures performed by each resident

ACR Practice Standards
ACR Practice Parameter for the Performance of Screening and Diagnostic Mammography Res. 39 – 2014

ACR Practice Parameter for the Imaging Management of DCIS and Invasive Breast Carcinoma Res. 13 – 2013, Amended 2014 (Res. 39)

ACR Practice Parameter for the Performance of a Breast Ultrasound Examination Res. 11 – 2011, Amended 2014 (Res. 39)

ACR Practice Parameter for the Performance of Contrast-Enhanced Magnetic Resonance Imaging (MRI) of the Breast Res. 12 – 2013, Amended 2014 (Res. 39)

ACR Practice Parameter for the Performance of Stereotactic-Guided Breast Interventional Procedures Res. 26 – 2011, Amended 2014 (Res. 39)


ACR Practice Parameter for the Performance of Ultrasound-Guided Percutaneous Breast Interventional Procedures Res. 7 – 2014

ACR Appropriateness Criteria for Breast Imaging
https://acsearch.acr.org/list

GOALS AND OBJECTIVES ROTATION 1
All mornings start at 7:30am. On Monday of each week review planned schedule (screening/biopsy/diagnostic sessions) with staff according to the rotation goals and your anticipated time off service. Update staff on a daily basis with plan.

Planned: 12 screening session, 19 Diagnostic sessions (one in clinic), 8 biopsy sessions

MEDICAL KNOWLEDGE

- Learn/review physics specific to mammography.
- Develop understanding of basic benign and malignant breast pathology.

Technical aspects

- Learn technical aspects of mammography exam acquisition from mammography technologists, including screening, diagnostic, and stereotactic positioning.
- Spend 1 hour on morning 1 with technologist in screening area
- Spend the afternoon of day 1 with technologist in diagnostic area
- Supplement positioning training with video resources.

Screening goals: See screening protocol described in the manual. At least 240 mammograms in 4 weeks

Diagnostic goals: 12 sessions (including one with clinic rad)

- Learn specific work-up evaluations for each abnormal finding.
- Perform diagnostic evaluations with supervision.
- Learn set-up and basic technique of breast US.
- Perform breast ultrasonography with supervision initially, then independently.
- Attend Breast Tumor Board on day that shadow clinic rad.

ASSESSMENT

- Global ratings by faculty
- Screening log and callback assessment
- ACR In-service examination

PATIENT CARE

- Learn screening guideline recommendations of the American Cancer Society and ACR
- Communicate effectively and demonstrate caring and respectful behaviors when interacting with patients and their families
- Gather essential and accurate medical and radiologic history pertinent to the procedure for which the patient is scheduled or for the examination that the patient has had
• Work with health care professionals, including those from other disciplines to provide patient focused care
• Keep breast procedure logs and competency check lists
• Learn basic clinical management of DCIS, Stage I/II Invasive Breast Cancer.

Biopsy goals: 8 sessions

• The day before biopsies mornings that you will be attending:
  o Review all cases – PACS, EDH.
  o Consider modality, approach, needle type, risks, challenges
  o Discuss any questions with staff who will be performing the biopsy
  o Write the pre procedure note
• Observe breast interventional procedures (wire locs, SN injection, core biopsy).
• Learn and perform mammographically guided wire localizations.
• Learn to perform straightforward stereotactic biopsies
• Develop skills in simple US guided procedures such as injected local anesthetic and cyst aspirations

ASSESSMENT

• Global ratings by faculty
• Document procedures in Resident Database

PRACTICE BASED LEARNING AND IMPROVEMENT

See Rotation 1 self study assignments in the Breast Imaging Manual
• Prepare cases for Pathology-Core Conf. (first Thursday of the month) during 1 or 2 sessions on the days preceding the conference and attend. See instructions in manual.
• Use information technology to manage information, access on-line medical information and teaching files, and support own education
• Utilize the available texts and journals to build knowledge base (see reading list in manual)
• Review journal articles dedicated to breast imaging
• Maintain a log of interesting and unknown cases, and obtain follow-up clinical and imaging information and pathologic diagnoses
• Start to learn about Quality Assurance/ Medical Outcomes as it particularly relates to breast imaging
• Attend conferences, including all staff to resident lectures, path-core conf (1 per month), Breast tumor board ≥ 1 per month.
• Participate in Journal Clubs related to breast imaging

ASSESSMENT

• Global ratings by faculty
• Conference attendance and participation

PROFESSIONALISM

• Review the introduction to breast imaging letter.
• Demonstrate respect, compassion and integrity
• Maintain an appropriate professional demeanor (including grooming and dress) and bearing
• Demonstrate a commitment to excellence and on-going educational and professional development
• Demonstrate a commitment to ethical principles pertaining to provision or withholding of clinical care, confidentiality of patient information
• Demonstrate sensitivity and responsiveness to patients’ culture, age, gender and disabilities
• Be conscious of being a role model for fellow residents and medical students
  o Arrive on time at beginning of work day and display a professional work ethic
  o Understand the ethical issues as related to breast imaging including patient confidentiality in giving results of study, informed consent, HIPAA regulations
  o Demonstrate professional values and ethical behavior including professional integrity, honesty, empathy and compassion

ASSESSMENT

• Global ratings by faculty
• ACR In-Service Exam
• Medical Student Evaluations
• 360 evaluation

INTERPERSONAL AND COMMUNICATION SKILLS

• Directly observe attending communication of significant results to patient
• Learn to communicate normal results directly to patient
• Obtain informed consent after explaining risks, benefits, and alternative procedures to patient
• Learn quality mammography reporting using BI-RADS® terminology
• Use the divisional templates for reporting
• Start to learn the ACR practice guidelines for communication.
• Provide direct communication of significant or unexpected findings to the referring physician
• Demonstrate ability to communicate effectively and professionally with other health care professionals, including nurses, technical and non-technical staff
ASSESSMENT

- Global ratings by faculty

SYSTEM BASED PRACTICE

- Understand how their professional practice affects other health care professionals, the health care organization and the larger society, and understand how these elements affect their own practice.
- Be prepared to evaluate the request for imaging as regards cost, effectiveness, and appropriateness, and to facilitate performance of an alternative study if indicated
- Begin to become familiar with the ACR Appropriateness Criteria related to breast imaging.
- Begin to understand screening costs and how it relates to national health care goals

ASSESSMENT

- Global ratings by faculty
- ACR In-service Exam
GOALS AND OBJECTIVES ROTATION 2

All mornings start at 7:30am. On Monday of each week review planned schedule (screening/biopsy/diagnostic sessions) with staff according to the rotation goals and your anticipated time off service. Update staff on a daily basis with plan.

Planned: 12 screening session, 19 Diagnostic sessions (one in clinic), 8 biopsy sessions

MEDICAL KNOWLEDGE

- Review physics specific to mammography (FS, FFDM and DBT).
- Learn MQSA regulations: routine QA, interpretive audit, etc.

Screening goals: See screening protocol in handbook.

Diagnostic goals: 19 sessions (including one with clinic rad)

- Review specific work-up evaluations for clinical and abnormal mammographic findings.
- Perform diagnostic evaluations with supervision initially, becoming independent by last week.
- Perform breast ultrasonography with supervision initially (week 1), then independently.
- Develop detailed understanding of benign and malignant breast pathology including less common entities.
- Attend Breast Tumor Board on at least one day and shadow clinic rad.

ASSESSMENT

- Global ratings by faculty
- ACR In-service examination
- Learning Portfolio
- Screening log and callback assessment

PATIENT CARE

- Communicate effectively and demonstrate caring and respectful behaviors when interacting with patients and their families
- Gather essential and accurate medical and imaging history pertinent to the procedure for which the patient is scheduled or for the examination that the patient has had
- Learn to optimize the study, including radiation exposure for patient safety
- Work with health care professionals to provide patient focused care
- Review with attending requests for diagnostic mammography studies
• Understand risk/benefit criteria for screening and diagnostic mammography and how this will vary depending on clinical circumstances
• Demonstrate competency in obtaining informed consent prior to interventional procedure.
• Keep breast procedure logs and competency check lists

**Biopsy goals:** 8 sessions

• The day before biopsies mornings that you will be attending:
  - Review all cases – Imagecast, EDH (and insert pre-procedure note in EDH for staff to cosign).
  - Consider modality, approach, needle type, risks, challenges and complete procedure sheet
  - Discuss any questions with staff who will be performing the biopsy and confirm modality/approach/needle on procedure sheet with staff
• Perform breast interventional procedures
  - Wire locs with supervision (first week) then independently
  - Stereo Bx. with supervision (first week)
  - US spring loaded Bx with supervision (first 2 weeks) then independently for simple cases

**ASSESSMENT**

• Global ratings by faculty
• Procedure competency check lists

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**PRACTICE BASED LEARNING AND IMPROVEMENT**

See Rotation 2 self study assignments in handbook
• Prepare cases for Pathology-Core Conf. (first Thursday of the month) during 1 or 2 sessions on the days preceding the conference and attend. See instructions in handbook
• Use information technology to manage information, access on-line medical information and teaching files, and support own education
• Utilize the available texts and journals to build knowledge base
• Review journal articles dedicated to breast imaging
• Maintain a log of interesting and unknown cases, and obtain follow-up clinical and imaging information and pathologic diagnoses
• Start to learn about Quality Assurance/ Medical Outcomes as it particularly relates to breast imaging
• Attend conferences, including all staff to resident lectures, path-core conf (1 per month), Breast tumor board ≥ 1 per month (attending one and presenting second)
• Participate in Journal Club related to breast imaging
• Apply knowledge of study designs and statistical methods to the appraisal of clinical studies and other information on the diagnostic effectiveness of breast imaging and its role in the clinical care of the patient
• Use information technology to manage information, access on-line medical information; and support their own education
• Facilitate the learning of students and other health care professionals.
• Demonstrate knowledge and use of medical informatics in patient care and education
• Start learning about Quality Assurance/ Medical Outcomes as it relates to breast imaging
• Attend conferences
  o Participate in Journal Club

ASSESSMENT

• Faculty evaluation
• Medical Student evaluation
• ACR In-Service Exam
• Procedure Log

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PROFESSIONALISM

• Demonstrate respect, compassion and integrity
• Maintain an appropriate professional demeanor, including grooming and dress habits, and bearing
• Demonstrate a commitment to excellence and on-going educational and professional development
• Demonstrate a commitment to ethical principles pertaining to provision or withholding of clinical care, confidentiality of patient information, informed consent, documentation and business practices
• Demonstrate sensitivity and responsiveness to patients’ culture, age, gender and disabilities
• Demonstrate a professional work ethic with on time arrival and prioritization of patient needs and concerns

ASSESSMENT

• Faculty Evaluation
• Medical Student Evaluation
• 360 evaluation

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INTERPERSONAL AND COMMUNICATION SKILLS
• Work professionally and effectively with other health care professionals, including technologists, secretaries, schedulers, speech pathologists, nurses, students, residents and physicians
• Interact effectively and sensitively with patients, and with family members of patients, by greeting them appropriately, introducing yourself and your role, explaining the procedure to be performed, allowing them an opportunity to ask questions, obtaining informed consent when indicated, and discussing results as indicated
• Produce a concise but thorough dictated report
• Communicate the need for a biopsy or an abnormal finding under direct supervision
• Communicate findings effectively with the referring clinicians
• Communicate and document the communication of critical findings with the appropriate medical personnel in a timely fashion

ASSESSMENT

• Global ratings by faculty
• ACR In-service examination
• Dictation evaluation
• Learning Portfolio

SYSTEM BASED PRACTICE

• Understand how their professional practice affects other health care professionals, the health care organization and the larger society
• Learn how these elements affect their own practice
• Assist referring clinicians in providing cost effective healthcare
• Practice cost effective health care and resource allocation that does not compromise quality of care
• Be prepared to evaluate the request for imaging as regards cost, effectiveness, and appropriateness, and to facilitate performance of an alternative study if indicated
• Demonstrate knowledge of the ACR Appropriateness Criteria

ASSESSMENT

• Global ratings by faculty
• ACR In-service examination

GOALS AND OBJECTIVES ROTATION 3
All mornings start at 7:30am. On Monday of each week review planned schedule (screening/biopsy/diagnostic sessions) with staff according to the rotation goals and your anticipated time off service. Update staff on a daily basis with plan.

Planned: 12 screening session, 19 Diagnostic sessions (one in clinic), 8 biopsy sessions

MEDICAL KNOWLEDGE

- Review physics specific to mammography.

Screening goals: 320/4 weeks

Diagnostic goals: 19 sessions (including 1 clinic)

- Review specific work-up evaluations for clinical and abnormal mammo findings.
- Perform diagnostic evaluations with Supervision initially week 1, independently weeks 2-4.
- Perform breast ultrasonography with supervision initially (first days of week 1), then independently.
- Review breast MR cases.
- Develop detailed understanding of benign and malignant breast pathology including less common entities.
- Review MQSA regulations: routine QA, interpretive audit, etc.
- By the end of this rotation we expect that you will be able to "run" a breast imaging center.

ASSESSMENT

- Global ratings by faculty
- Screening log and callback assessment
- Boards review sessions
- ACR In-service examination
- ABR Written exam

PATIENT CARE

- Communicate effectively and demonstrate caring and respectful behaviors when interacting with patients and their families
- Gather essential, accurate and pertinent medical and radiologic history
- Perform tailored exams and procedures
- Work with health care professionals, including those from other disciplines to provide patient focused care
Biopsy goals: 8 sessions

• The day before biopsies mornings that you will be attending:
  o Review all cases – PACS, EDH (and insert pre-procedure note in EDH for staff to cosign).
  o Consider modality, approach, needle type, risks, challenges
  o Discuss any questions with staff who will be performing the biopsy
• Review and perform breast interventional procedures
  o Wire locs with supervision (first days) then independently
  o Stereo Bx. with supervision (first days) then independently
  o US spring loaded Bx and SN injections with supervision (week 1) then independently
  o US vacuum assist Bx with supervision.
  o MRI guided Bx with supervision for any resident considering sub-specialty training in Breast.

ASSESSMENT

• Global ratings by faculty
• ACR In-service examination
• ABR Written exam
• Procedure competency log

PRACTICE BASED LEARNING AND IMPROVEMENT

See Rotation 3 self study assignments in handbook
• Prepare and present cases for Pathology-Core Conf. (first Thursday of the month) during 1 or 2 sessions on the days preceding the conference and attend. See instructions in handbook
• Understand risk/benefit criteria for screening and diagnostic mammography and how this will vary
• Apply knowledge of study designs and statistical methods to the appraisal of clinical studies and other information on the diagnostic effectiveness breast imaging
• Use information technology to manage information, access on-line medical information; and support their own education
• Facilitate the learning of students and other health care professionals.
• Maintain procedure log in Resident database
• Demonstrate knowledge and use of medical informatics in patient care and education
• Attend all staff to resident conferences, attend (x1) and present path-core conf (x3 per month), present Breast tumor board 2 per month
ASSESSMENT

• Global ratings by faculty
• 360 degree evaluation
• ACR In-service examination
• ABR Written exam
• Medical Student evaluations

PROFESSIONALISM

• Demonstrate respect, compassion and integrity
• Maintain an appropriate professional demeanor, including grooming and dress habits, and bearing
• Demonstrate a commitment to excellence and on-going educational and professional development
• Demonstrate a commitment to ethical principles pertaining to provision or withholding of clinical care, confidentiality of patient information, and business practices
• Demonstrate sensitivity and responsiveness to patients’ culture, age, gender and disabilities

ASSESSMENT

• Global ratings by faculty
• ACR In-service examination
• ABR Written exam

INTERPERSONAL AND COMMUNICATION SKILLS

• Work professionally and effectively with all other health care professionals
• Interact effectively and sensitively with patients, and with family members of patients, by greeting them appropriately, introducing yourself and your role, explaining the procedure to be performed, allowing them an opportunity to ask questions, obtaining informed consent when indicated, and discussing results as indicated
• Communicate the need for a biopsy or other abnormal results to patients with indirect supervision
• Produce an accurate, concise dictated report
• Communicate findings effectively with the referring clinicians
• Communicate and document the communication of critical findings with the appropriate medical personnel in a timely fashion
ASSESSMENT

- Global ratings by faculty
- ACR In-service examination
- ABR Written exam

SYSTEM BASED PRACTICE

- Review (week 1-2) / Present (weeks 3-4) cases for Breast Tumor Board (Wednesdays 12-1).
- Review MQSA regulations, and understand routine QA, interpretive audit
- Understand how their professional practice affects other health care professionals, the health care organization and the larger society
- Know how these elements affect their own practice
- Assist referring clinicians in providing cost effective healthcare
- Practice cost effective health care and resource allocation that does not compromise quality of care
- Evaluate requests for imaging as regards cost, effectiveness, and appropriateness, and to facilitate performance of an alternative study if indicated
- Understand the ACR Appropriateness Criteria as they relate to breast imaging

ASSESSMENT

- Global ratings by faculty
- ACR In-service examination
- ABR Written exam