Interpreting physicians. All physicians interpreting mammograms for the facility shall follow the facility procedures for corrective action when the images they are asked to interpret are of poor quality.

**Cranial Caudal View**

- Pectoralis muscle visualized in only 30 to 40% of the patients.
- When pectoralis is not included, the measurement of the PNL should be done.
- Medial tissue vs lateral tissue
- Nipple in profile
- Look for large variations in nipple location.

(page 86)
**Mediolateral Oblique View**

- Pectoralis muscle included to PNL
- Pectoralis muscle sufficiently wide and convex
- Retroglandular fat included (page 89)
- IMF (inframammary fold)

**Nipple in Profile**

- Required in one view
- If unable to get nipple in profile, you may be losing breast tissue to accomplish nipple in profile

*It is important that the radiologist, medical physicist, and the quality control technologist work as a team to provide optimum quality images, which will ultimately provide the best medical care possible to the patient.*

**COMPRESSION**
**COMPRESSION**

- Decreases breast thickness
- Reduces dose
- Scattered radiation
- Object unsharpness
- Motion unsharpness
- Uniform thickness

**UNDEREXPOSURE**

- When it is present only in the densest part of the breast will obscure lesions and microcalcifications
- AREAS OF THE FILM WITH OPTICAL DENSITIES BELOW 1.0 ARE UNDEREXPOSED
- The pectoralis muscle may have densities under 1.0, but needs to be exposed sufficiently to show underlying breast tissue

**EXPOSURE**

- Good viewing conditions
- Difficult to see skin and subcutaneous tissue without proper reading room lighting
- Underexposure most common problem in mammography
- Underexposure results in decreased radiographic contrast.

**CONTRAST**

- Defined as the differences in optical density between adjacent areas of the film
- Fatty tissue should have an optical density of at least 1.2, however densities between 1.5 and 2.0 are preferable

**kVp**

- In digital we are looking for a higher kVp for a harder beam.
- An increase in kVp might eliminate long exposures that could lead to motion unsharpness.
**SHARPNESS**

- Ability of the mammographic system to capture fine detail in an image
- Patient motion is the most common cause of image unsharpness
- Motion unsharpness is more likely to occur when the exposure times exceed 2 seconds
- Unsharpness on only one part of the image is often due to motion and can be related to non uniform compression

**NOISE**

- Decreases the ability of the radiologist to discern tiny structures
- Quantum Mottle—fluctuation in the number of x-ray photons absorbed at individual locations in the intensifying screen or pixels of a detector.
- The fewer x-ray photons used to make the image, the greater amount of quantum mottle. More likely on high contrast images

**ARTIFACTS**

- Presence of multiple artifacts is a sign of deficient quality control
- Grid lines or grid non uniformities
- Digital Artifacts

**Causes of Image Unsharpness**

- Patient Motion
- Compression
- Focal Spot Size
- Object to Image Receptor Distance
- Source to Image Receptor Distance

**Know the Mammography Acquisition System**

- Automatic Exposure Control
  - Know which setting controls which factors
  - Filter and Anode selection
  - Calibration is a must
  - Compression
Accreditation Submission

Clinical Image Review Parameters
- Positioning
- Compression
- Exposure level
- Sharpness
- Contrast
- Noise
- Artifacts
- Exam identification

Clinical Images
- The images should be examples of the facility’s best work
- The images should be from actual patients and have been formally read by the radiologist

Clinical Images
- The ENTIRE BREAST must be imaged in a single exposure on each projection.
- Any breast tissue missing will be considered an automatic failure

Clinical Images
- Each case (adipose and dense) must be negative (Birads Assessment Category 1).
- Benign cases (Birads Assessment Category 2 and Incomplete cases (Birads Assessment Category 0) should not be used
- Any questions the site should call the ACR for assistance

Radiologist Role in Accreditation
The lead interpreting radiologist must review and approve hardcopy images
**LABELING**

- MQSA Requirements
  - Each mammographic image shall have the following information on it in a permanent, legible, and unambiguous manner and placed so as not to obscure anatomic structures.
  - Digital images must be labeled with the MQSA required identification information
    - The ACR reviewers will evaluate this

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**Positioning**

**First Attempt**  **NOT GRANTED**

- First deficiency
- Facility may continue performing mammography with unit as long as they have a valid MQSA certificate
  - REPEAT not acceptable area(s) (only if more than 60 days on MQSA certificate),
  - REINSTATE by retesting all areas (if 60 days or less on MQSA certificate),

**Second Attempt**  **NOT GRANTED**

- Second deficiency = first failure
- ACR strongly recommends facility cease performing mammography with unit
  - REINSTATE by retesting all areas (with corrective action),
  - APPEAL decision on original images (may not operate until the appeal is complete), or
  - WITHDRAW

**Third Attempt**  **NOT GRANTED**

- Third deficiency = second failure
- ACR strongly recommends facility cease performing mammography with unit
  - REINSTATE after participating in Scheduled On-Site Survey,
  - APPEAL decision on original images (may not operate until the appeal is complete), or
  - WITHDRAW

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**Name and patient identifier**
**Date of examination**
**View and laterality**
**Facility name and location (city state and zip)**
**Technologist identification**
**Mammographic unit identification**

**Number One Reason for ACR Failure**
The Number One Reason for ACR Failure

- POSITIONING

Thoughts to remember

- If you are stressed as the technologist positioning a patient, the patient becomes stressed.
- Whether this is your first mammogram of the day or the last….this is your patients first of this year.
- If you don’t get the breast tissue on the image, the radiologist can’t read it.

Thoughts to remember