



Breast Imaging Protocols: Why, How, and When

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Implementing a policy and procedure manual is standard practice at most imaging facilities and is a requirement for maintaining compliance with regulatory guidelines. However, it is surprising that establishing and adhering to standardized protocols for breast imaging teams is often overlooked by facilities. Many team members expect that necessary imaging protocols are included in the facility's policy and procedure manual. While this may be true to some extent, a policy and procedure manual generally does not include the comprehensive and inclusive imaging protocols necessary to establish clear expectations for imaging technologists to elevate efficiency and quality practices. This article identifies the value of a standardized imaging protocol manual, the critical elements to include, personnel involved, and recommendations for the development of these protocols.

Standardized imaging protocols provide these benefits:

- Drive efficiency and improve consistency
- Reduce errors
- Help minimize patient anxiety
- Promote positive patient experiences and working environments
- Lower technical callback rates and reduce unnecessary callbacks
- Decrease unnecessary interruptions between the interpreting radiologist and technologist
- Provide an outline for technologist training and competency assessment for new hires and current employees
- Reduce the possibility of litigation

Clear expectations set forth by substantiated imaging protocols limit confusion, define workflow, create uniformity, reduce misunderstandings among team members, and provide every patient with the same high-quality care.¹

Imaging departments are extremely busy, which can lead staff members to make small adjustments in an attempt to stay on schedule or catch up. Under those circumstances, there is risk of deviation from established standard processes, potentially causing an increase in errors, neglect of specific aspects of care,



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and a decrease in image quality that leads to technical recalls and increased patient anxiety. Revenue is also lost when a technical callback examination takes the place of a revenue-producing new patient screening examination or diagnostic examination for a patient with an acute clinical finding.² A patient leaving to go to another facility due to an unsatisfactory experience and employee turnover costs related to unsupported practices also carry the risk of additional lost revenue.

Deviation from established protocols can increase the incidence of errors, therefore increasing the risk of litigation. The likelihood of a radiologist being the defendant in at least one lawsuit is 50% by age 60 years; however, the frequency and average number of suits accrued varies widely by state of residence and sex.³ Patients may bring legal charges against radiologists or imaging facilities for a number of reasons, including failure to diagnose breast cancer or negligence due to a fall resulting in injury. Established protocols and appropriate training can help prevent patient falls or injuries during mammography. Although not all falls can be prevented, specific protocols relating to patient falls can help the technologist know exactly what steps to take for prevention and how to appropriately respond and follow up should a fall occur.

When technologists, physicians, or other personnel interrupt an interpreting radiologist to check protocol for an examination or answer questions, the radiologist's attention may be taken away from the examination at hand, potentially decreasing accuracy and increasing the likelihood of dictation errors, missed diagnoses, and higher recall rates.⁴ A study by Shah et al found that some radiologists spent as much time on interruptions as they did interpreting studies.⁵ Standardized protocols that outline clear guidance and imaging expectations can help limit radiologists' workflow interruptions by decreasing the number

of questions from imaging staff members and protecting radiologists' time for examination interpretation.

Establishing Standardized Imaging Protocols

How to establish standardized imaging protocols and who to involve during this process should be strategically considered. Forming a team of representative staff members such as the medical director, interpreting radiologists, radiation officer, physicist, staff technologists, nurses, administrators, and auxiliary personnel such as receptionists should be considered when drafting the imaging protocols. Because technologists and radiologists will be performing and interpreting examinations and finalizing the protocols, their involvement and acceptance is imperative. Protocols must be constructed from evidence-based material, well-recognized references, peer-reviewed literature, and published guidelines.¹ This process includes using resources such as the ACR Practice Parameters, Mammography Quality Standards Act regulations, ACR Appropriateness Criteria, and peer-reviewed literature from medical journals and imaging societies. A solid protocol thoroughly and specifically describes what needs to be done. Consistency in protocol performance is essential, especially if a patient receiving diagnostic imaging is having a follow-up examination and accurate, reproducible imaging is critical.

Considerations for protocol development include the following:

- Scheduling guidelines
- Patient preparation and history intake
- Screening and diagnostic imaging guidelines
- Diagnostic callback imaging guidelines
- Breast procedure imaging guidelines
- Use of skin markers for scars, skin lesions, and abnormalities
- Technical callback imaging guidelines: explanation of the technical callback procedure, threshold for technical callback images, and a script to use when calling patients to request a return for additional images due to technical callback
- Image acquisition and quality check:
 - A standardized positioning technique, including a standardized sequence of acquiring mammographic views, to be implemented and used by all technologists to ensure consistency and image reproducibility
 - A standardized positioning technique to promote proper use of body mechanics to maintain technologists' physical well-being
 - An image quality checklist for reference, along with appropriate and consistent methods of measuring the posterior nipple line on both the craniocaudal and mediolateral views

- Supplemental views:
 - Appropriate use of supplemental views, including the exaggerated craniocaudal lateral view, anterior compression view, nipple-in-profile view, and repeat views for motion, artifact, and skin or fat folds
 - Well-defined guidelines for imaging skin and fat folds, which are among the most difficult elements to create guidance for within imaging departments
- Special imaging considerations:
 - Emergency protocols for patient adverse events, contrast agent reactions or extravasation, and examination or procedure complications
 - Protocol for skin tears to include patient education and postexamination care
 - Special patient circumstances and patients with physical limitations
 - Scripts for documenting patient history and information for radiologists

Imaging protocols should not include adverse or sentinel event procedures but should provide a clear reference to the location of that information in the facility's policy and procedure manual with the specific policy number or title. Additional detailed facility policies that supplement the protocol should be listed in the protocol manual for quick reference.

All responsible personnel should clearly understand, adhere to, and annually review a comprehensive standardized protocol guidebook. Team members at all of the organizational locations and satellite affiliations must have access to and knowledge of updated protocols. Options for ensuring ease of accessibility may include online authorization to a shared file, a protocol manual binder in each imaging room, and a designated central location at the technologist workstation. Establishing and maintaining standardized protocols is essential for fostering consistency within an imaging team and elevating the quality of patient care.

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