Patient Care, Communication, and Safety in the Mammography Suite

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Communication and patient safety play important roles in being an effective mammographer and providing patient care. The mammographer is aware of the significance of technical skills and ensuring a safe and accurate examination but also must understand that interactions with patients are equally important. Along with obtaining quality images, a mammographer should provide a positive experience for the patient. Patients often view mammogram examinations as unpleasant or embarrassing. Therefore, the initial encounter and dialogue between the technologist and patient can influence whether the patient will return for subsequent screening mammograms or follow-up imaging and procedures.1 The manner in which the technologist explains, listens, and empathizes with the patient contributes to overall patient satisfaction and ultimately can affect patient outcome. The mammographer often is faced with a variety of patient factors or concerns that can influence the examination’s outcome, including patient-provider communication, safety issues, and positioning challenges.1

Practice Foundations

The professional foundation for patient care in mammography is based on the Standards of Ethics of the American Registry of Radiologic Technologists (ARRT) and the Practice Standards for Medical Imaging and Radiation Therapy of the American Society of Radiologic Technologists (ASRT). These documents define the professional role of radiologic technologists and address several patient care topics, including communication, safety, and patients’ rights. Mammographers should be familiar with and adhere to the ethical and the practice standards as part of their professional duty.2,3

Producing high-quality mammograms requires excellent technical skills along with exemplary communication. Mammographers must be able to address differences in patients’ mental states, body habitus, and physical ability to obtain an optimal examination. In addition, every mammographer must practice consistently with patient safety, care, and satisfaction in mind. This article discusses verbal and nonverbal communication strategies, barriers to communication, and the care and safety of patients in the mammography suite who present special challenges.

After completing this article, the reader should be able to:

- Discuss the importance of communication skills related to obtaining a high-quality mammography examination.
- List strategies for becoming an effective communicator.
- Explain the relationship of communication to patient satisfaction and consumer scores.
- Examine barriers to good communication.
- Identify patient safety issues that can occur in the mammography suite.
- Describe body habitus and physical changes that can interfere with obtaining a safe and optimal examination.

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The ARRT’s Standards of Ethics consists of 2 parts: the code of ethics and the rules of ethics. According to the Registry, the code of ethics is an “aspirational guide,” and the rules of ethics are “mandatory and enforceable standards.” Candidates for certification and registered technologists must meet these ethical standards to be eligible for certification and registration.

The 10 statements of the code of ethics describe the ideal professional conduct of the registered technologist and outline the professional values that serve the best interests of the patient (see Box 1). Statements 1 and 3 address patient care; these statements pledge that a technologist will provide quality care without discrimination. Patient safety is covered in statements 4 and 7. These statements affirm that technologists will use their technical expertise appropriately to protect patients, coworkers, and the public. Statements 6 and 9 touch on communication issues. A technologist acts as an intermediary between the patient and the physician and respects confidential information and the patient’s right to privacy.

The ASRT developed the practice standards to serve as a guide for appropriate practice. Health care facilities use practice standards to create job descriptions and establish practice parameters. In addition, legal authorities often consult practice standards during litigation when questions arise concerning a minimum standard of acceptable performance. However, state or local statutes and regulations take precedence over practice standards when they conflict.

The Mammography Practice Standards refer to the scope of practice and performance standards for mammographers. The standards also describe the minimum levels of education and certification required to practice. The role of mammographers with respect to patient care and communication is clear. According to the standards, mammographers “are the primary liaison between patients, licensed independent practitioners, and other members of the support team,” and they “must remain sensitive to the needs of the patient through good communication, patient assessment, patient monitoring, and patient care skills.”

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**Box 1**

**American Registry of Radiologic Technologists Code of Ethics**

1. The radiologic technologist acts in a professional manner, responds to patient needs, and supports colleagues and associates in providing quality patient care.

2. The radiologic technologist acts to advance the principal objective of the profession to provide services to humanity with full respect for the dignity of mankind.

3. The radiologic technologist delivers patient care and service unrestricted by the concerns of personal attributes or the nature of the disease or illness, and without discrimination on the basis of sex, race, creed, religion, or socio-economic status.

4. The radiologic technologist practices technology founded upon theoretical knowledge and concepts, uses equipment and accessories consistent with the purposes for which they were designed, and employs procedures and techniques appropriately.

5. The radiologic technologist assesses situations; exercises care, discretion, and judgment; assumes responsibility for professional decisions; and acts in the best interest of the patient.

6. The radiologic technologist acts as an agent through observation and communication to obtain pertinent information for the physician to aid in the diagnosis and treatment of the patient and recognizes that interpretation and diagnosis are outside the scope of practice for the profession.

7. The radiologic technologist uses equipment and accessories, employs techniques and procedures, performs services in accordance with an accepted standard of practice, and demonstrates expertise in minimizing radiation exposure to the patient, self, and other members of the healthcare team.

8. The radiologic technologist practices ethical conduct appropriate to the profession and protects the patient’s right to quality radiologic technology care.

9. The radiologic technologist respects confidences entrusted in the course of professional practice, respects the patient’s right to privacy, and reveals confidential information only as required by law or to protect the welfare of the individual or the community.

10. The radiologic technologist continually strives to improve knowledge and skills by participating in continuing education and professional activities, sharing knowledge with colleagues, and investigating new aspects of professional practice.

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Communication Methods

Effective communication is one of the core components of a quality examination, positive patient experience, and effective patient care. Technologists must speak with and listen to patients to gather information for the examination and the patient’s medical record. The mammographer’s communication with the patient is key to providing an environment in which the patient can build trust and feel safe.¹

Communication should not be limited to patient history or general information. It also should include education about mammograms. For example, more than half of women who receive mammograms overestimate the radiation dose from mammograms. Teaching women about the risks and benefits of mammography can help them make more informed decisions about screening.¹ Mammographers also should explain the mammogram process or other breast imaging examination to the patient. A technologist who communicates effectively will gain better cooperation from the patient. In turn, the patient should have a better experience and higher satisfaction from the visit. Research has shown that patients perceive the quality of health care from a particular organization based on the quality of interactions they have with members of the health care team. Patients want to have their examination performed in a professional, friendly, and timely manner.¹

The value of a positive provider-patient relationship cannot be underestimated and is regarded as one of the most crucial components of the health care delivery system. Using effective communication, mammographers can help ensure that patients adhere to physician recommendations such as follow-up breast imaging.¹ Furthermore, patients now are more involved in their health care choices because of changes in the American health care system that emphasize patient-centered care. One reason for the shift to more patient involvement is research that shows people want a personal connection, good communication, and empathy with providers.⁶ As health care policies continue to emphasize the patient’s role in making health care choices, technologists must build professional skills that help them inform and engage patients. Patients want to be informed by the professional conducting their examination and with terminology they can comprehend.⁷

Patient Satisfaction Instruments

To standardize and compare patient satisfaction measures, the Centers for Medicare & Medicaid Services (CMS) and the Agency for Healthcare Research and Quality developed the Hospital Consumer Assessment of Healthcare Providers and Systems (HCAHPS). The National Quality Forum endorsed HCAHPS in 2005, and the first surveys were conducted in fall 2006.⁷ The HCAHPS surveys provide incentives for hospitals to improve their overall quality of care. HCAHPS scoring relates to inpatients only, however. Several other tools, such as Press Ganey, are available for formal measurement of patient satisfaction.⁸ Patient satisfaction surveys solicit feedback from patients on imaging examinations, including soliciting comments about their mammography experience. Patient satisfaction now is being measured and benchmarked or compared for a number of inpatient health care services as part of values-based compensation from CMS and private payors.⁹,¹⁰

Soft Skills

Because patient satisfaction is so important, mammographers should develop soft skills. Soft skills refer to proficiencies in interacting with people; they are independent of technical ability.¹¹ When asked what they expect from a health care provider during testing, most patients placed information and compassion at the top of their lists.¹ Patients arriving at the mammography suite for their regular screening mammogram, diagnostic mammogram, or any breast-related examination or procedure perceive the encounter as a very personal examination. Patients often are embarrassed or frightened about imaging examinations and anxious about results, which can inhibit their communication and ability to relate their history. This, in turn, can affect the mammogram and the diagnosis.¹

Mammographers have a duty to each patient to obtain pertinent information for the physician that aids in disease diagnosis and treatment.¹ They obtain this information through observation and communication.
The initial encounter with the patient sets the tone for building a relationship for future visits, patient relationships, and patient satisfaction. Studies related to mammography have indicated that patients who were unsatisfied or who reported a negative experience during the examination were most likely to disregard recommendations for future mammograms. A study by Ndikum-Moffor et al confirmed that patients are more likely to communicate health issues and comply with instructions and recommendations for future imaging if a relationship between the patient and mammographer is established from the initial meeting. Dolan et al reported on a survey regarding whether mammography patients were satisfied with reporting and understood their results. The authors concluded that most patients were dissatisfied with the manner in which their results were communicated. Patients who received diagnostic mammograms reported a higher satisfaction response because results are reported immediately. This study emphasized the patient’s perspective when waiting for mammogram results and the expectation of clear communication of results in a timely manner.

Mammographers use soft skills daily at work, including applying interpersonal communication, listening, and remaining approachable to patients. Nonverbal communication (body language) and listening also play a role in patient communication and satisfaction.

**Verbal and Nonverbal Communication**

Verbal communication is the basis for establishing a rapport with a patient. The mammographer will communicate most effectively by choosing terms appropriate for the patient, using correct grammar, and speaking in a clear voice. The mammographer also should face the patient when speaking. This demonstrates that the mammographer considers the patient important and worth the mammographer’s time and attention. Face-to-face communication also allows the patient to see the movement of the speaker’s lips, expressions, and nonverbal cues, which can improve understanding and help a patient who has hearing loss.

Although the mammographer typically serves as the communication link between the patient and the radiologist, at times, the radiologist directly communicates with a patient. The radiologist is more likely to take the lead in this role at a breast clinic or during diagnostic mammography. Communication between radiologists and their patients concerning mammography can be challenging. One study found that radiology residents reported receiving no additional education related to communication following graduation from medical school; residents indicated that the lack of training correlates with their ability to respond to patients’ emotional needs.

One resource that health care facilities might incorporate into their employee education is the Acknowledge, Introduce, Duration, Explanation, Thank you (AIDET) tool from the Studer Group. Box 2 provides an example of how the AIDET tool can be used. These 5 aspects of communication include:

- Acknowledgement – this includes greeting and welcoming the patient and acknowledging the patient’s health concerns. Mammography patients often are nervous and seeking acknowledgement from the technologist to feel valued and not just another examination in the schedule. Patients

| Box 2 |
| Acknowledge, Introduce, Duration, Explanation, Thank You (AIDET) Tool |
| The following example shows how the AIDET tool can work in mammography: |
| Before the examination – Good morning, Mrs. Smith. I see you are here for your yearly mammogram. My name is Julie, and I am going to perform your examination today. In case you have any concerns, I want you to know I am a registered technologist and have been conducting these exams for more than 15 years. Your examination will take about 10 minutes; I will take a total of 4 images initially. I’ll then review your images before you leave and return to your busy day. Do you have any questions before we get started? |
| After the examination – Thank you, Mrs. Smith, for coming to our facility today and allowing me to perform your examination. Your doctor will receive the official report in approximately 2 days, and you will receive a letter from us about your results as well. Please feel free to call us if you have any questions related to your examination. |
want to be greeted in a friendly manner, and this initial encounter can set the tone for the examination. Addressing patients in a professional manner and asking them how they would like to be addressed often is an opportunity for a positive beginning to the examination.

- Introduction – mammographers should introduce themselves and inform patients about their role in the patient’s health care. Patients want to know who is performing the examination and whether the technologist is qualified. Mammographers should exhibit confidence by responding to the patient’s questions regarding the mammographer’s qualifications for performing the examination. This also includes wearing a name badge or other identifier.

- Duration – mammographers should inform the patient approximately how long acquiring the mammogram will take and attempt to meet the stated timeline, being realistic enough to account for the possibility of additional images. Patients are busy and want to know how long they will be at the imaging facility. Patients who are given a general time frame for reference often are more cooperative in helping complete the examination successfully.

- Explanation – the mammographer should explain the procedure in terms the patient can understand so the patient knows what to expect. A patient who is having her first mammogram understandably might be curious about the examination. A mammographer who takes the time to demonstrate how the equipment and compression paddle work likely will gain more cooperation.

- Thank you – mammographers should thank patients for their cooperation and participation in the examination and for choosing the facility. Patients increasingly have a say in health care decisions and providers.

Nonverbal communication consists of posture, eye contact, facial expressions, and gestures during an interaction between 2 or more people. Physical gestures and other nonverbal cues send strong messages to the receiver. The initial encounter between the patient and the mammographer is an important first impression and start to the examination. The patient determines whether the mammographer is approachable, professional, and friendly. Patients continually receive signals from mammographers during examinations, so mammographers should be aware of their tone of voice, volume, and the speed at which they are speaking.

Touch is another form of nonverbal communication to patients, whether the touch is related to positioning or to offer some type of emotional support. Mammographers can use touch effectively, such as taking an older patient’s arm and guiding the patient to the unit, or it can be offered as an act of compassion. However, it is important to be aware of a patient’s cultural background and beliefs. For example, in the United States, touching a patient during a mammogram is an acceptable part of the examination, whereas in some cultures, touch can be viewed as an insult to the patient. Therefore, mammographers should communicate when and how they will need to touch a patient during an examination.

**Active Listening**

Effective communication also includes being an active listener. Active listening is full engagement in a person’s speech or conversation by being attentive and concentrating on the message. It also helps to listen for cues that might increase the listener’s understanding of the emotion behind a message. Some strategies for active listening include:

- Maintaining a focus on the patient and being actively engaged in noting the patient’s body language and other possible nonverbal signals. This includes using the patient’s tone of voice for cues of potential emotion in the inflection.

- Keeping in mind that the left side of the brain is the main processing center when listening, including comprehension and emotions. Some experts suggest leaning in and using the right ear when listening to a patient to facilitate comprehension.

- Avoiding interrupting or trying to redirect a conversation to one’s personal concerns. Patients need time to process the questions they have been asked and respond. It can help to allow the patient to lead the conversation.
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- Demonstrating interest in what patients are saying. Positive comments, such as “yes” or “please finish what you were going to say,” let patients know that a listener respects their ideas and information.
- Remaining in a nonjudgmental, nonbiased state of mind. Patients might not hold the same beliefs or values as the mammographer. It is important to maintain a professional and neutral position.
- Providing positive feedback during conversations and clarifying any information that is not understood.

**Written Communication**

Obtaining a patient’s history begins as a verbal exchange between the patient and the mammographer. Mammographers document the patient’s history either electronically or in paper form. Obtaining a patient’s history is an integral part of the mammogram because the history communicates a patient’s statements about his or her general health and breast health to the radiologist who is reviewing and interpreting their images.

During the interview, patients attempt to determine whether a mammographer is empathetic, genuine, and engaged in the conversation. It is important that a mammographer establish trust and be respectful to the patient in the initial encounter, including addressing the patient personally by name and stating the reason for the questions about patient and family history. The mammographer has a duty to listen carefully to patient responses and transcribe the information accurately. According to the American College of Radiology (ACR), 75% of women who receive a breast cancer diagnosis have no factors that place them at risk. If a patient is symptomatic, a complete medical history should include 7 components:

- Location of a mass or symptom.
- Chronology – when the symptom started.
- Quality – physical symptoms, such as color or tenderness.
- Severity – rapid growth or number of lesions.
- Onset – how the patient knew something was wrong.
- Aggravating factors – whether symptoms only appear after certain activities, for example.

- Associated symptoms – pain in other areas of the body.

The medical record is vital in assisting the radiologist with screening and diagnostic image interpretation. Gathering incomplete histories can compromise patient outcomes. The mammographer must remain sensitive to the patient and ensure the patient understands all questions. The radiologist uses the medical history when reviewing the images and before dictating the final report. Breast cancer is not always associated with physical symptoms, and screening mammograms are not acquired because of clinical symptoms. Additional information can help the radiologist to interpret a study accurately.

The Mammography Quality Standards Act (MQSA) requires that patients receive their results in the form of a letter within 30 days of the examination. Further, the patient letter must be written in lay language. Using lay terms provides the patient with results they can comprehend more easily. This requirement is additional confirmation that communication during and after a mammogram is essential to patient care.

Patient letter verbiage is based on Breast Imaging Reporting and Data System (BI-RADS) categories, and if the patient’s breast tissue is dense, this information must be included in the letter. Despite efforts to make patient letters more understandable to women, letters are sometimes lengthy and misinterpreted by recipients. Marcus et al surveyed women to determine whether the sample letters provided by the ACR were readable and in language that was easily understood by patients. The authors reported the majority of patients did not comprehend the letter they received because of generally unclear wording and use of medical terminology.

Dolan et al studied the way in which mammography results were communicated and its effect on patient satisfaction. In this study, women who underwent screening and diagnostic mammograms before MQSA was enacted gave a low rating for how clearly results were explained to them. Study participants suggested that the way in which their results and follow-up were communicated was significantly more important to them than the actual results.
**Barriers**

Mammographers must have good written and oral communication skills to acquire quality images in the necessary projections and communicate with the patient and radiologist. The technologist acts as the patient’s advocate and must provide precise communication when relaying medical information to the radiologist.

Barriers to communication can affect the quality of the examination; these barriers are defined as anything that interferes with understanding and that can lead to misinterpretation of the message. Some common communication barriers are psychological attitudes or prejudices, cultural differences, and sensory disabilities, such as impaired sight or hearing. Mammographers should never assume that patients understand all requests made during examination positioning.

Patients with visual impairments require a description of their surroundings and actions as they occur. For example, the mammographer should explain normal sounds made by the equipment. They also should remain patient with individuals who have speech loss or aphasia and encourage patients to take all the time needed to complete their statements. Repeating the statement back to the patient can help confirm understanding. Patients sometimes benefit from a demonstration of the position requested. Other techniques include written instructions or use of electronic devices, such as a tablet or computer, as an alternative form of communication. If the patient has hearing impairment, mammographers should face the individual directly, speak clearly, and if necessary, write the message or information down for the patient to read.

Cultural boundaries can create barriers to communication or adherence with screening mammography. Cultural competence is the practice of recognizing beliefs and practices of individual cultural groups regarding well-being, health, and modesty. Respecting cultural boundaries is an integral part of providing patient care; mammographers should remain aware that common symbols and terms can have different meanings for some patients.

A patient’s culture might interfere with communication through differences in spoken language and different meanings for the same words or phrases among cultures. Some situations might require the use of a translator to communicate with the patient. Some health care facilities now offer electronic translation for communication online or via telephone in lieu of an on-site translator; other facilities have in-house or on-call translators.

Psychological barriers often are the result of individual prejudices, attitudes, and personalities. One study reported that some women were hesitant to have a mammogram because of conflicts with their faith or culture, a belief that mammograms were no longer necessary, or because of fear that a mammogram would damage their breast implants. Education and communication can help overcome these barriers to screening mammogram adherence.

Physical barriers related to mammography include the patient’s body habitus, physical stature, and breast size. Communication can help overcome barriers to examinations and screening adherence. For example, mammographers should not assume that patients can move into position as asked, even if they heard and understood instructions. A patient who has a physical injury or disability might not be able to move into position as requested or maintain the position. The mammographer should help patients who cannot move into proper position with further instructions or an offer to physically assist the patient.
Safety

The quality of communication can affect patient safety positively or negatively. Communicating effectively provides clear instructions for patients and helps mammographers gather information that might affect patient safety or examination results. Initial patient encounters offer the opportunity for technologists to establish a dialogue by performing an initial patient assessment. This assessment includes proper identification of the patient, whether the patient is at risk for falls, and the patient’s mental and physical state.

Mammographers can learn a great deal about patients’ physical states while escorting them from the waiting area to the mammography suite, including whether the patient is at risk for falls or needs any physical assistance getting to the examination room or completing the examination. Observing the patient closely helps the mammographer determine the safest approach to the examination that will yield optimal images. Patient assessment also includes determining whether all necessary information for the mammogram can be displayed by acquiring the standard craniocaudal (CC) and mediolateral oblique (MLO) projections, or whether supplementary projections will be required for a diagnostic study.

Patient Identification

Proper patient identification is a priority before beginning the patient’s examination. Health care workers should take patient identification seriously because of the potential to conduct the wrong imaging examination on a patient. Proper patient identification is part of Joint Commission National Patient Safety Goals. The Commission specifically stated that health care workers must use 2 identifiers for all patients. The most common practice to confirm patient identification in the outpatient setting is to state the patient’s name and ask the patient to state his or her name back, along with date of birth. Additional examples of identifiers are an assigned identification number, telephone number, or other person-specific identifier. In the inpatient setting, workers can verify the identity of a patient with the hospital-issued armband as one of 2 identifiers. In either setting, the 2 patient identifiers also must match information on the patient’s medications, identification band, or patient specimens.

Although the Joint Commission has made 2 patient identifiers a priority for imaging examinations, wrong-patient events still occur. Sadigh et al reported on near-miss, wrong-patient events in radiology. The authors stated that mislabeling images and misidentification of patients results in errors in final reports. The study determined that even though dual identifiers were mandated, the number of near-miss patient events regarding labeling for imaging was substantial. Mammographers should remember that patients often are nervous and easily can misunderstand information presented to them, including verification of their own name.

Fall Prevention

Because of their persistent occurrence in health care facilities, the Joint Commission also listed fall prevention as a responsibility of health care workers. Falls also have been identified by the CMS as a preventable event that should never occur. CMS has placed on-site falls and trauma on its list of hospital-acquired conditions for which reimbursement can be affected. Specifically, CMS is concerned about falls that result in fractures, dislocations, and intracranial injuries. On average, serious injuries add 6.3 days to a patient’s hospital stay and cost approximately $14 000.

It is common practice to evaluate a patient’s fall risk as a standard of care and best practice in patient care. According to the Agency for Healthcare Research and Quality, fall prevention is part of universal precautions, which means prevention applies to all patients regardless of their overall health or condition. Falls can occur in the radiology suite, and perceiving all patients as potentially at risk for falling leads to a safer environment.

To evaluate a patient’s fall risk, health care workers should ask the following questions at minimum:

- Have you fallen in the past 90 days?
- Do you use a cane, walker, or other ambulatory aid?
- Do you take any medications that might affect balance or mental status?

The fall risk assessment should be included in the patient’s electronic health record and must be updated on each visit.
Transport and Transfer

Patients who live in an extended-care or independent-care facility might be transported to a mammography facility to receive a screening mammogram or other breast imaging examination, and staff must evaluate each patient upon arrival. The mammographer’s careful assessment of the patient before the examination will enhance the likelihood of obtaining a quality examination.

Technologists must use their own discretion to determine how best to acquire breast images and safely transfer and assist these patients. Mammographers must understand basic body mechanics and allow patients to do as much of the physical work as possible to participate in the movements. Assistive equipment, such as plastic slides, plastic sheets, or hydraulic lifts, can aid in moving a patient when necessary. Hydraulic lifts cradle and transfer the patient to a mammography chair or stretcher. The use of devices or patient transfer equipment should assist in the positioning or transfer of patients for examinations as needed and limit potential injury to patients and staff.

According to the office of Occupational Safety & Health Administration (OSHA), health care workers must trust the technology available for assisting in patient transfers and transports. Mammographers should explain lifting procedures to gain the patient’s cooperation and overall engagement with the move. Doing so also increases the patient’s trust in the mammographer and maintains more patient dignity. Although use of assistive equipment and the associated explanations take extra time, use of this equipment provides the most efficient and safe method of moving or transferring the patient and decreases the possibility of injury to the patient and technologist.

Patients With Special Considerations

Mammography patients can become emotional during the examination, and the mammographer should be sensitive to the patient’s feelings and needs during the examination, including modesty. Although mammograms can generate physical discomfort for a patient, acknowledging the patient’s concerns about pain and discomfort should not be discounted; instead, mammographers should explain the reason for some discomfort and obtain optimal images while keeping patients as comfortable as possible.

Men who have mammograms will likely feel awkward in the mammography suite. The mammographer should ease these patients’ anxiety and promote their comfort as well. A mammographer should thoroughly inform them about the equipment and examination and encourage them to ask questions. Increasing patient knowledge about mammograms can help reduce a patient’s anxiety and embarrassment and increase cooperation to complete the imaging.

Some patients face special challenges during mammography because of intellectual or physical disability or because of older age. According to the World Health Organization, patients with disabilities are more likely to report finding their health care provider inadequate in meeting their needs, being treated poorly, and even being denied care. Occasionally, technologists perform mammograms on patients who have intellectual disabilities. These patients’ disabilities can range from slight to severe, and can affect a patient’s ability to cooperate physically during the examination or to comprehend fully patient instructions from the technologist. To produce a quality image and a successful examination, the mammographer must concentrate on imaging the breast anatomy while maintaining a sense of calm and ease to help relieve tension or anxiety in a patient who has a disability.

Age also is a consideration. Women aged 55 years and older who have no symptoms should decide how often to undergo mammography screening. In October 2015, the American Cancer Society altered its screening recommendations for women with no symptoms of breast cancer. The recommendations were revised to suggest that women aged 55 and older should receive mammography screening every 2 years and have the option to continue yearly screening. Screening should continue if a woman is in good health and expected to live 10 years or more.

Elderly patients might have special physical needs or need extra time to understand what is required of them during the examination. Patients who have dementia might not be aware of their surroundings and often are disoriented. Some elderly patients who have dementia
might not be able to understand the examination or be able to assist the technologist in positioning their anatomy. A patient with dementia also could become agitated.22

Allowing a family member or trusted caregiver to assist a patient who has dementia into the room during the examination can help ensure a more successful mammogram for the patient and technologist. If a patient with dementia becomes upset or agitated, hearing a familiar voice sometimes can calm the patient. The family member or caretaker also can help decide whether to halt the examination.

Sometimes, patients who have dementia simply need to be rescheduled for another day when they might be more relaxed and less stressed. Mammographers must remember that the way they describe or demonstrate information to the patient can cause problems that lead to an aborted examination.39 Using nonverbal communication and demonstrations might help a patient with Alzheimer disease or dementia better understand the purpose and positioning involved in the examination. Mammographers should be aware of and skilled in various communication methods to help achieve a successful examination.37

Mammographers should treat all patients with dignity and respect. The mammographer must assess each patient and apply knowledge and skills to ensure a safe and quality examination. It is possible to acquire most images with some tenacity and a common-sense approach. If an examination cannot be completed on a particular day, rescheduling a mammogram is not a sign of failure; rather, it recognizes and meets the needs of each patient, which is good patient care.34

Positioning Challenges

Patients who have mammograms have all types of body habitus and stature. For example, imaging men, patients in a wheelchair or motorized device, and those who have kyphosis can present positioning challenges. Mammographers must know how to acquire images of patients with unique positioning and imaging challenges and identify the projections that can accommodate a patient’s physical limitations and provide diagnostic quality images. Patient body habitus considerations are important in mammography because these factors influence the ease or difficulty with which mammographers position patients to acquire the highest quality breast images and maintain patient safety.

Body habitus can be categorized into 4 types: sthenic, hyposthenic, asthenic, and hypersthenic.35 The patient with a sthenic body habitus is one who is nearest average in body build and shape. All other body types are gauged in reference to the sthenic body category type. The hypersthenic patient presents a larger, more massive body type, with a wide and deep thoracic cavity and a wide and protruding abdomen. In these patients, obesity generally is a characteristic, and their breasts usually are large and pendulous. In comparison, the hyposthenic patient has a thin, slender build with narrow thoracic and abdominal cavities. The asthenic patient is the extreme of the hyposthenic body type, with a very slender and thin body build. In the hyposthenic and asthenic body classes, the breasts are small.35

In the event the mammographer cannot acquire standard projections, additional or supplementary projections should be obtained to ensure the entire breast anatomy is covered. The purpose of the supplementary projection is to provide additional information that is not displayed on the standard projections or aid in demonstrating a suspicious area visualized on only one of the routine projections. Supplemental projections might be the only solution for a complete and successful examination in patients who present imaging challenges, and the mammographer must determine whether these additional projections are necessary.7

Patients in Wheelchairs

Patients who are in wheelchairs when arriving at the mammography suite typically can assist mammographers with positioning. Mammographers always should ask patients about how comfortable they are with movements and positioning.14 It is possible to acquire images of patients in wheelchairs if the chair has removable arms. However, mammographers should be aware that when the side arms are removed, it is easier for patients to fall to the side, especially patients who lack trunk stability. If transport is required, the mammographer should determine the best method of transfer for the examination. Four basic types of wheelchair transfers
can be used: standby assist, assisted standing pivot, 2-person lift, and using a hydraulic lift.

If a patient’s wheelchair does not have removable arms, it can be challenging to acquire an MLO projection because the x-ray tube comes into contact with the chair’s arms. If the arms are not removable and prevent acquiring a satisfactory MLO projection, the patient can remain in the chair and the mammographer can acquire a lateromedial or mediolateral projection. The CC projection can be obtained with the patient seated upright in the wheelchair. If the patient needs support, the mammographer can offer a foam positioning sponge, pillow, or folded blankets for the patient’s back, assisting the patient into a more upright position. Alternatively, the mammographer can acquire the image with a from-below projection.36,37 This projection is possible providing the patient does not have an extended abdomen. If a patient cannot maintain posture, the mammographer can aid positioning by14,37:

- Having the patient sit on an adjustable stool (preferably without wheels or with brakes) for height.
- Elevating the patient by placing a cushion or sturdy elevation device on the wheelchair seat.
- Using a chair designed to accompany the mammography unit.
- Using a stretcher if the patient can tolerate sitting on it instead of a chair or stool. The stretcher’s side rails offer the patient additional security.
- Asking for additional help from other staff members or family members when the patient is on a stool or stretcher.
- Ensuring the patient is positioned safely by locking or securing the chair, stretcher, or other device before acquiring images.

Patients on Stretchers

Some patients must be on a stretcher in an upright or recumbent position for their mammograms.37 Mammographers can acquire standard projections on patients who can sit upright; however, the mammographer should be aware that some patients on stretchers have limited mobility. Asking for assistance from another technologist can improve the examination process by making it less stressful for the patient and the mammographer.

General safety rules apply to this situation, such as having the stretcher as close to the unit as possible.37 In addition, patients on a stretcher who can be examined in the erect position should sit on the side of the stretcher to facilitate positioning closer to the mammography unit. The mammographer must assist the patient into an upright position and ensure he or she is secure. While helping a patient into an upright position, the mammographer must maintain the patient’s safety. This includes supporting the patient’s back, and ensuring that the stretcher’s wheels are in a locked or stabilized position.14

Recumbent Patients

Acquiring images of patients who must have their mammograms while in the recumbent position can be difficult. Mammography practice can vary from institution to institution across the United States. The positioning techniques suggested here are a compilation of expert opinions and best practice techniques.

Mammographers can image recumbent patients for the from-below CC projection by assisting the patient into the supine position with the tube rotated at a 90° angle (see Figure 1).37 This position can be challenging and awkward, especially if the equipment lacks flexibility and maneuverability. The mammographer must position the breast according to the standard CC projection. Ideally, 2 mammographers work together for this projection; one supports the patient while the other positions the breast and applies compression. Angling the stretcher into the unit might offer better positioning and include more breast tissue. The patient also can be positioned at an angle. However, the patient’s upper body must be moved forward and the lower body moved away from the unit.

A recumbent MLO projection is possible with the tube angle at 0° and the patient in a semiprone position on the side of interest. The image receptor is positioned under, or lateral to, the patient’s breast and the patient rolls into position. Another alternative is to image the breast with the patient in a semiprone position with the image receptor medial to the breast and the tube angle at 0° to obtain the LMO projection.
In addition, the mammographer could image the breast using a lateral projection. Recumbent lateral images are obtained in a fashion similar to MLO images, with the patient lying on the side. If the right breast is the breast of interest, then the patient lies on her right side with her right arm up and under her head as much as possible. This position can facilitate either a lateromedial or mediolateral projection. The determination is based on which projection displays the most breast tissue. If the patient is on her side with the image receptor adjacent to the medial side of the breast, then the mammographer would acquire lateromedial images. If the decision is made to acquire mediolateral images, then the mammographer should place the image receptor under, or lateral, to the breast (see Figure 2). Women who have large breasts might have to hold the opposite breast back to prevent superimposing tissue on the image; the mammographer should ensure the patient’s hand is not visible in the field of view.

**Other Challenges**

Patients who have small breasts have very thin compressed tissue, causing the breast to slide out of the compression unit. Mammographers are trained to use a spatula to help hold the breast in position while applying compression. This technique also can help when imaging male breasts, but men who have gynecomastia usually have enough breast tissue for the desired projections.

Women who have extremely large breasts, or macromastia, must have images acquired in sections. This requires taking multiple images and overlapping the breast tissue. Women who have large breasts might be uncomfortable with their breast size or appearance and can be apprehensive because the examination requires them to tolerate additional overlapped imaging and associated compression and positioning.

Imaging of a patient who has a protruding abdomen also presents a challenge to the mammographer. The mammographer should ask the patient to step away from the unit and lean forward to ensure an open inframammary fold. Reducing tube angulation for the MLO projection might help, but the goal is to keep the patient’s abdomen out of the compression area (see Figure 3).

Other challenges include kyphosis (curving of the spine), frozen shoulder, and barrel chest. The curvature causes breast tissue to be pulled inward and a sunken or caved-in appearance of the patient’s chest area known as pectus excavatum. Use of the from-below projection and a reverse MLO projection provide the best solution for patients with kyphosis. Patients who have pectus excavatum often can be examined using 2 CC projections (one for the medial tissue and one for the lateral tissue) and a reverse MLO or lateromedial oblique projection. If patients have limited shoulder mobility for the examination, the mammographer generally acquires CC and lateromedial images. Patients who have rounded “barrel chests” might require additional images. The MLO can be performed as usual, but an exaggerated CC lateral projection can include

**Figure 1.** Imaging in the from-below cranial caudal projection with the tube rotated 90° and the patient supine. © 2016 ASRT.
additional lateral breast tissue. These additional projections can lengthen the examination and make the process more difficult for elderly patients or those who have physical limitations.

**Conclusion**

Mammography is a rewarding profession, and the variety of patients presents challenges for technologists. Mammographers must be competent in technical skills and well versed in patient care, communication, and safety. Communication is as important at the beginning of the examination as it is during or after its completion and should be recognized as a critical skill for producing quality breast images.

Mammographers should be willing and able to answer patient questions using language the patient can comprehend. As the liaison between the patient and the radiologist, mammographers play an important role in maintaining patient safety and helping patients maintain their breast health.

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Patient Care, Communication, and Safety in the Mammography Suite

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1. The American Registry of Radiologic Technologists ______ are mandatory and enforceable standards.
   a. curricula
   b. practice standards
   c. code of ethics
   d. rules of ethics

2. Which of the following statements is true regarding the Hospital Consumer Assessment of Healthcare Providers and Systems?
   a. The tool was developed exclusively for imaging.
   b. The first surveys were conducted in 2012.
   c. It has been endorsed by the National Quality Forum.
   d. It primarily measures patient outcomes and sentinel events.

3. Soft skills refer to how people interact with one another and are independent of technical ability.
   a. true
   b. false

4. The Mammography Quality Standards Act requires that patients receive their results in the form of a ______ within ______ days of the examination.
   a. phone call; 30
   b. letter; 30
   c. phone call; 45
   d. letter; 45
5. During mammography with patients who have visual impairments, the mammographer should:
   1. describe the patient's surroundings.
   2. describe actions as they occur.
   3. explain normal sounds made by the equipment.
   a. 1 and 2
   b. 1 and 3
   c. 2 and 3
   d. 1, 2, and 3

6. The Joint Commission stated that when properly identifying a patient, _______ identifier(s) must be used.
   a. 1
   b. 2
   c. 3
   d. 4

7. The use of devices or patient transfer equipment:
   a. increases the possibility of injury to the technologist.
   b. limits potential injury to patients and staff.
   c. does not affect technologist safety.
   d. is discouraged because of concerns related to patient comfort.

8. In 2015, the American Cancer Society changed its breast cancer screening recommendations for women without symptoms to include:
   a. annual screening for women until age 70 years.
   b. halting annual screening at 60 years of age.
   c. annual mammograms on women beginning at 40 years of age.
   d. screening every 2 years for women aged 55 and older.

9. Using _______ communication might help a patient with Alzheimer disease or dementia better understand the positioning involved in the examination.
   a. verbal
   b. loud
   c. oral
   d. nonverbal

10. The _______ and craniocaudal (CC) projections can be obtained with the patient seated upright in a wheelchair.
    a. mediolateral oblique (MLO)
    b. from-below
    c. exaggerated CC
    d. mediolateral

11. For recumbent CC projections, the C-arm of the mammography unit must be turned as if positioned for the standard _______ projection at a true _______ ° angle.
    a. CC; 90
    b. lateral; 90
    c. CC; 45
    d. lateral; 45

12. Use of the from-below projection and a _______ projection provide the best solution for patients with kyphosis.
    a. routine MLO
    b. cleavage view
    c. reverse MLO
    d. 90° lateral view
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