



ISRRT
INTERNATIONAL
SOCIETY OF
RADIOGRAPHERS
& RADIOLOGICAL
TECHNOLOGISTS

MAMMOGRAPHY QUALITY PROGRAM GUIDANCE

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Summary

Despite controversies around screening mammography and the value of this life-saving technology, mammography continues to be the gold-standard screening tool for early detection and decreased breast cancer mortality. Maintaining quality practices is paramount for the effectiveness of this imaging modality. This guidance document addresses key challenges, strategies and best practices to aim for when performing mammography. Just as quality care is priority for the patients we serve, enhancing and optimizing all aspects of quality for your mammography program is essential.

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Mammography Quality Program Best Practices - a Guidance Document



Introduction

This guidance document focuses on best practices and overcoming key challenges that can affect mammography quality. There are so many factors that can affect overall quality for any breast program. Each factor is much like an individual link of a chain. Together, with overall quality, they create one strong chain. However, when one factor (one link) is weak, or at increased risk for negatively affecting quality, the entire chain is at risk for diminished quality.

(Chain link examples include: Mammography Equipment- Quality Control- Radiologist/s- Scheduling Process- Medical Physicist/s- Mammography Technologists- Patient Experience-Admitting Process- Viewing Conditions- Service Engineer/s- Technical Factors- Equipment Manufacturer- Image Archiving- Safety Culture- Training and Continued Education- Customer Service- Reporting and Result Communications- etc....)

This document does not address all possible quality ‘links’, such as personnel operating the mammography unit or providing the interpretation. It is vital that appropriately educated professionals are supporting this modality. In certain countries board certified radiologists, physicists and mammography radiographers are required and educated with appropriate training and ongoing continued education. It is recommended that appropriate mammography specific training and breast anatomy education is completed. Applicable professional certifications and accreditations are encouraged and may be required in some counties. It is recommended that each are active in their own

profession and professional organizations to continually remain educated and up-to-date on the ever-changing world of mammography technology.

It is realized that the term used for the mammography imaging professional varies greatly based on each country. Titles of technologists, radiographers, radiologic or radiological technologists, mammographers and mammography practitioners seem to be the most common terms. For the sake of this guidance document the title used to describe the professional performing mammograms will be noted as the mammographer.

Quality is so much more than the equipment quality control testing that we often think of. By definition, the term of quality is defined as a degree of excellence, a level of superiority and something every professional mammographer should aim for. The many aspects of quality that affects radiology professionals performing mammography are detailed below.



Professional Education

The concept of continued education, or life-long learning, is never as important as it is with breast imaging. Due to the internet and social media, patients are more knowledgeable than ever when it comes to healthcare and they may present with increased questions, concerns and/or misinformation. How you respond to their questions and concerns is a reflection of you as a professional and a reflection of the healthcare facility you work at. Research with breast cancer detection and technology has produced rapid changes over the past 30 years. The past decade in particular has seen numerous advancements that require constant education to understand technology and treatment

concepts and options. There are more imaging and treatment choices than ever and an understanding of how each can affect and change this profession is important for mammographers to know.

Know what regulations and rules pertain to where you practice. In some areas, mammography is the highest regulated imaging modality and keeping abreast of those regulations is no small task. If you have minimum requirements for continued education it is recommended that you do not stop with the minimum. Technology changes do not stop, so as a professional you should not settle for minimum knowledge. Seek reputable continued education resources for learning whether this is in the form of conferences, professional organizations, print or internet teaching tools. Search out your resources and use them. Consistently reviewing images and receiving feedback regarding image quality is crucial to continually improve image quality. Ask questions of your medical physicist and your radiologists so you can glean knowledge directly from them. Do you have a mammographer mentor? If not, identify a mammographer that you respect and that you see radiologists and patients respond well to. Use their knowledge as a way for you to learn from them, as a mentor. Most all seasoned mammographers are happy to share their tips.



Service Excellence

➤ Patient Emotions and Fears

Most radiology technologists enter their profession because they want to help people in need. Mammographers are much the same. Unlike some radiology exams, mammography is an imaging examination that requires an understanding of not only the science of the technology but a solid understanding of the fears and emotions of women

having the test performed. Mammography is a very personal experience and certainly can be an exam that is fear provoking. Women often arrive with worries of breast cancer, fears of compression and fears specific to their pending test results. They often have worries of breast cancer from experiences and/or memories of friends or family who have been diagnosed. They may have had a personal breast cancer diagnosis or previous scare with benign biopsies. An abnormal finding leads to heightened emotional emergencies for the patients we serve. Awareness of these fears will improve technologist patient care and compassion.

➤ **Patient Experience and Outcomes**

As any healthcare professional, mammographers understand the desire to do their very best with each and every encounter knowing every patient is deserving of the best care possible. It is that caring passion that allows every mammographer the desire to understand patient's rights along with their feelings of worry. Maintaining patient privacy and dignity is priority while showing the utmost respect and kindness to each. This is a vital part of the professional mammographer's core values. Use of private patient dressing rooms with comfortable gowns or robes demonstrates how you value patient dignity and privacy. Being treated respectfully and kindly also improves quality in the form of patient satisfaction.

Giving the patient the ability to express their concerns and comments in the form of a patient satisfaction survey can be very helpful. Each facility should consider a short survey that provides immediate feedback regarding the patient's experience. Allow the ability to have write-in comments so patients can honestly reflect on ways for you and your facility to improve while adding value by listening to the voice of your customers. Survey comments and findings should be shared with staff. This transparent type of feedback

provides valuable information for individual employees. Consideration may be given to exploring ways to share survey outcomes with patients and public.



Communication Excellence

It is important to understand that communication includes verbal, written, nonverbal actions as well as active listening skills. There is an art to effective communication skills, especially with anxious patients. Awareness to patient nonverbal communication is just as important as listening to what the patient verbally speaks. The same can be said about the verbal and nonverbal communication that the mammographer exudes towards patients. Your tone, mannerisms, or lack of smiles may speak louder than the words you actually say.

Effective communication can be challenging, yet rewarding, especially when you are able to calm fears. Anxiety interferes with patient listening and understanding so you may need to repeat key points more than once. Listen to your patient. Really pause after you ask a question allowing the patient time to think and respond. Listen to their tone to get a feel for how nervous they are. Your communication skills will help the patient relax for optimal imaging. Introduce yourself to the patient before starting the exam. You can help manage patient expectations by explaining what you are going to do, how long it will take and how and when the patient can expect to get their results. Responding, to patient's questions and concerns, while calming their fears, and showing compassion as you perform their imaging tests is required.

It is recommended that your entire department agree on best practice scripting for common patient comments and questions so all are sharing the same messages and using the best phrasing possible. Make a list of your top five to ten most frequent questions

and/or most important instructions and agree on how you want all to respond. This will increase the quality of your department-wide communication and help all co-workers work as a unified team.

Before parting with each patient, always ask if there are questions or concerns that you can help address. This helps the patient to not feel rushed and allows them one more opportunity to share a concern and to know you care. The patient may have questions that you are not able to answer but you can see if the radiologist or if their referring physician can assist. At the end of a breast imaging exam, it is important to explain if at any time the patient notices a change in their breast, before their next mammogram is due, to let their health care provider know. Explain the reporting process, including when and how to expect their results helps manage patient expectations as well as reduce unnecessary anxiety when waiting for mammogram results.

Beyond communication with patients, effective communication is needed with written and verbal conversations between technologists and coworkers, radiologists, health care providers and their office staff, as well as throughout the communities we serve. Others look to mammographers as professionals in their words, actions, and documentation.



Safety and Radiation Protection

Aspects of safety directly affects quality and every mammographer needs to be aware of and practice within their scope and within a culture of safety. Breast imaging in general is achieved with a relatively low radiation dose. Unlike mammography, other diagnostic breast imaging modalities, such as ultrasound or MRI, magnetic resonance imaging, do not produce radiation. By nature of the low kVp, focused field, use of

compression and imaging only soft tissue vs. bone, the mammogram radiation dose remains quite low. So low that some countries require lower than usual levels of lead thickness in room walls and doors while some countries do not require lead lined walls and doors at all. Availability of lead skirts and lead thyroid shields for patient use varies with some countries. If recommended in your country, have one in the mammography room and use when appropriate and when requested. ALARA, ‘as low as reasonably achievable’ principles apply to this modality. Mammographers and radiologists should be mindful that only diagnostic images that are necessary are performed and acquired with proper exposure factors to ensure the dose to the breast is as low as possible. Repeat and reject quality reports should be consistently reviewed according to accreditation and regulations of your country. This analysis ensures images are appropriately being taken. Women who are pregnant do not participate in screenings. For our safety, mammographers stand behind shielding due the repetitive exposures. Environmental radiation monitoring and tracking is recommended. You may have regulations to follow specific to dose tracking. For a period there was controversy on whether or not to use thyroid lead shields for routine mammograms, but experts agree this is not necessary due to the focused low x-ray dose. The thyroid shield may increase the risk of artifact by appearing in the image, requiring a repeat exam, which only adds to the overall dose. Keep current with the rules and recommendations of your country and/or accreditation body to properly educate patients regarding shielding practices.

Mammographers should implement responsible, safe practices for their patients at all times. Department protocols should be put in place to protect both patient and employee safety so not to compromise safety. Use caution when angling the x-ray tube and detector

gantry system or when adjusting paddles or other attachments. Make sure all body parts are not at risk of being bumped by the moving equipment. Use caution when decompressing the breast to be certain an unstable patient does not lean back and lose their footing. Any unstable patients should be considered for positioning with the patient in a chair. For positioning ease, chairs without arms or removable sides are preferred. Chairs or stools that have wheels should have the ability to lock in place so not to increase fall risks. Visualize the patient's breasts before positioning to ensure there are no risks of skin tears, especially under the breasts where the skin may be thin or damp. Inform the patient if you notice redness or other skin changes and document your findings.

As a protective infection control device, gloves protect both the patient and the mammographer. Glove use is often not required for general mammography but patients appreciate the appearance of cleanliness. Hand washing and /or disinfectant hand gel is important to use between all patients. Most mammograms are performed without any signs of body fluids but on occasion some discharge may be noted. Do use gloves if there is any signs of open sores, rash or discharge.

Keep equipment safety in mind. As mammographers we become used to how a machine typically sounds during compression and exposures. Any change or unusual sounds should be reported to service representatives. Grinding compression or louder exposure sounds both are signals that the unit needs service attention. Make note of any error codes that appear on the control panel. It is wise to have preventative maintenance checks performed on your mammography equipment every six months. Quality control tests are performed to make sure the unit is running at an optimal performance level. If the manufacturer has any modifications or released updates, do have those scheduled to be

installed. Some updates offer fixes to known issues which only maintains quality and assures safety. Consult with your Medical Physicist regarding any future service upgrades or installations.

Mammographers should read the operators manual for each unit to learn of the specific features and how to best care for your equipment. Take note of your medical physicist, biomedical engineer, and the service engineer contact information for quick reference. Learn the equipment warranty terms after an installation. Learn the specifics on the manufacturer quality control testing and needed documentation. Your manuals should be a document that is easily accessible by all who may need to use it. The manual should also outline the best way to clean and disinfect your equipment. Only use cleaning products approved by the manufacturer. For patient and radiographer safety, clean the areas of contact between every patient adhering to the cleaning product contact time. It is important for the patient to know they are having a mammogram on a sanitary machine. Some facilities either clean the machine in front of the patient or post a sign noting the unit is cleaned between every use. This visual puts patient's minds at ease and helps to assure the patient that their visit was safe. Some facilities may use the artifact-free, one time use detector pads or covers manufactured specifically for mammography. Such pads do not take the place of cleaning but they do offer a level of warmth for the patient and some feel these covers help decrease the risk of skin tears.

Part of safety is keeping patient information confidential. Patient names, identifiable numbers and outcomes should all be considered protected health information. Patient privacy pertains to imaging just as much as patient outcomes, reports or other documents that are part of health records. To respect patient privacy, personal information should be

asked in a private environment only and computers with worklist and images should not be left open in areas that other patients can see. Conversations about cases should only be discussed in non-public areas between health care professionals that need to know the information specific to the care of that patient.

Quality assurance is a form of safety. Thinking of ways to double check processes is important to minimize errors and improve quality. Safe practices are essential. Safety affects the wellbeing of all patients and employees. Any safety concerns from patients, employees, physicians, volunteers or visitors should be considered equally important and valid. Devise a process to log safety concerns to best track each and work towards timely resolutions.



Process Excellence

➤ Standard Process

There are a number of quality benefits to implementing and enforcing standardized processes for any mammography site. This becomes most important for any facility that has more than one mammography technologist or radiologist. The concept is to establish a best practice workflow that promotes image quality while eliminating waste. This includes any types of waste such as time, resources, or energy. If all mammographers perform the same step-by-step actions then the more streamlined, consistent, and reproducible the end product is. A few examples of such actions may include, but are not limited to: when positioning the patient, how supplies are used, where supplies are stored, how and when patient histories are taken, the order of acquired projections, the order of quality control tests, etc...

Efficiencies are created when supplies are placed at point of use and within easy reach of the mammographer. This establishes a smooth workflow that becomes apparent to the patient and improves employee satisfaction by creating less work, more timely care and improved ergonomics. Eliminating workflow waste adds value to the patient. The mammographer is better able to focus on the patient and focus on obtaining the best images possible with the patient, rather than focusing on the extra steps and needed work to complete each task. Lean, Six Sigma and 5 S are a few of the more common process excellence workflow principles but all have the same goals of creating efficiencies with less waste and adding value to patient care.

➤ **Standard Protocols**

When performing diagnostic mammography at a center where there is more than one radiologist, using same best practice protocols for various imaging scenarios is a must. If each can agree on standard initial views to be obtained, the mammographer can use those as a starting point to efficiently proceed with each case. Once the agreed initial views are obtained, the radiologist can review those images and determine if additional views are needed as they guide the examination. Agreed upon reporting templates assures all reports are thorough, complete and in a consistent format for the referring provider to review. The bottom line is standardized processes improve quality.

➤ **Performance Improvement**

Process excellence tools are helpful with mammography workflow and they facilitate a trajectory of continued improvement. Part of quality improvement is the concept of constantly looking for areas that need improving. Improvement projects can range from very small to very large scaled projects. Whether updating report templates, patient

education and letters to the planning of new equipment installation and training, performance and quality improvement projects help outline action plan tracking and goals. Establishing SMART (specific, measureable, achievable, relevant, and timely) goals will help your performance improvement projects maintain structure and effectiveness.



Image Acquisition Excellence

➤ Positioning

High quality images require a solid understanding of best patient positioning practices. Learning the correct positioning and being comfortable with positioning are really two different goals that all new mammographers need to achieve. Repetition is a must to gain confidence and perspective of how quality imaging looks and feels, as well as how to problem solve and adjust for the best image. Proper positioning is key to ensure all breast tissue is included on the images so it can be evaluated for signs of breast cancer or other abnormalities. Obtaining all breast tissue is a challenging goal. Every patient's habitus is very different from the next just as every patient's breasts are very different from the next. Body habitus plays an important factor in positioning. Shorter patients may require a lesser oblique angle and taller women will typically require a steeper angle for the MLO, mediolateral views. For the CC, craniocaudal views, equipment adjustments are made for height and to properly lift the breast for optimal inclusion of breast tissue. Patient physical conditions, nervousness, and range of motion difficulties limit the ability to image all breast tissue. Positioning is as much of a skill as it is an art and mammographers need to be confident in their ability to adjust positioning to accommodate varying body habitus to get the best images possible.

Ergonomics plays a role with positioning. Mammographers may be tempted to bend under the mammography gantry tube head when positioning MLO views. Adapting your stance with a slight lunge or squat is better than repetitive stooping which will only add to personal ergonomic problems over time. If the patient is extra tall or small you may suggest the patient sit for their mammogram. Keep the foot pedals in close reach and use them when appropriate to decrease hand and wrist repetitive motion. Awareness to appropriate body mechanics has become extremely important. Effective verbal communication with the patient helps to guide the patient to the desired position without compromising mammographer ergonomics. To avoid occupational injuries caused by poor posture, such as frozen shoulder, carpal tunnel syndrome, stenosing tenosynovitis, the practice of ergonomic health when positioning is encouraged.

There are many nuances to positioning such as maintaining a pleasant rapport with the patient, explaining what you are doing before you do it, maintaining eye contact and smiling, confidently adjusting the machine and control panel, answering questions and providing breathing instructions, etc.... all happen prior to each view exposure. Create a positioning checklist that can be used for new technologist training. It can refer to each of the positioning steps and the various quality indicators for achieving top quality patient images. The checklist can be used as an initial competency or as an ongoing, periodic imaging critique tool. Examples of two such forms have been placed in this document under the resource section to help achieve positioning excellence.

Patient relaxation is important to achieve the best positioning outcomes with as much pectoralis muscle on the images as possible. When proper pectoralis muscle is visualized, it indicates all possible breast tissue was included on the image. Relaxation is

improved by explaining its importance for best images. Small talk conversation, relaxing music, soft room lighting and comfortable room temperatures all help. Breathing techniques can be implemented to slow breathing and promote relaxation. Manage patient expectations with explanations so they always know what you are doing while being upbeat and compassionate as you strive to create a good experience for every patient. Make each patient feel they are the most valued of the day.

➤ **Compression**

Compression is a vital part of mammography. Providing an explanation of how and why compression is used, prior to applying compression is important. Explain how slow, even compression helps decrease breast thickness and lessens the x-ray dose while preventing a blurred image. Share the value of separating the internal anatomy as it helps the radiologist visualize the tissue. Assure the patient that in a matter of a few seconds the compression will be released as soon as possible. Compression with compassion is a good motto to strive for. As you slowly compress, compress only to the point that the breast becomes taut and not movable. Give each patient an element of control and let them know you want them to inform you if they experience discomfort or pain. Explain that compression is not comfortable but it should not be truly painful. If a patient expresses pain, talk to them while compressing and use slow, smooth manual- hand compression vs. foot pedal compression. Sometimes the discomfort can come from skin pulling; releasing compression to reposition can help relieve pulled tissue and help the patient relax. Focusing on the conversation vs. the noise of a foot pedal can be very helpful. On rare occasions you may need to reposition the patient and start over to achieve a more comfortable exam. Keep in mind, over compression is not necessary and should never be practiced. There is no

benefit to compressing beyond what is appropriate and it will only make the patient never want to have another mammogram in the future.

The goal is to achieve at least the same or preferably better images compared to the previous images. If available, it is helpful to routinely look at the previous images before doing each patient. In a digital or tomosynthesis environment it is helpful to have the previous images visible on a monitor, in the room, during the exam. Having an understanding and awareness of the amount of compression previously used is helpful for quality image consistency. Depending on the mammography unit, compression may be measured in the form of Decanewtons / Newtons, Kilograms or Pounds.

Check the rules of your location but typically mammography images should have the following clearly labeled: facility name and location, patient name, unique identification number (date-of-birth and/or patient number), name of projection /view, left or right side, date of examination, mammographer initials or name, detector / machine identification number (if more than one).



Equipment Excellence

Equipment quality is the combined responsibility of radiologists, medical physicists, mammographers and the manufacturers. Some accreditation programs require a quality control mammographer for each facility. The identified quality control mammographer is responsible to ensure quality tasks are completed in a way that meets applicable quality control requirements. Ensure correct equipment performance tests are being performed in an appropriate manner and timeframe with proper documentation of each test. Equipment quality control performance requirements vary depending on mammography type: film/

screen, digital, tomosynthesis and with equipment manufacturers. Various country, state, facility, accreditation and certification requirements exist. Every mammographer should become knowledgeable of the expectations and regulations that pertain to their quality program and their equipment.

Every manufacturer has a user and quality control manual that matches the mammography machine and the version of that unit's software. Every mammographer should be familiar with these manuals and follow the manufacturer guidelines for the care, cleaning and quality control instructions and documentation for each machine. Mammographers should adhere to any accreditation or certification rules and regulations of their facility, state or country.

Some basic, routine equipment performance tests are necessary to give assurance of image accuracy. The manufacturer or accreditation bodies may provide you with preferred quality control documentation forms. Become familiar with your user and quality control manuals matching the mammography machine and software version of each unit. Follow manufacturer guidelines for proper cleaning, quality control instructions and documentation for each machine. Acquaint yourself with the equipment engineers that service your mammography system/s to promote an open line of communication.

Mammography quality assurance and quality control programs typically include testing evaluations and monitoring of radiation dose, image quality, repeat and reject analysis, artifact review, compression testing and exposure reproducibility. Quality assurance also includes a visual check of equipment to confirm the c-arm, detector, operator control, paddles, mechanical locks and all aspects of the equipment are in optimal working order. A generic quality checklist is included in the resource section of this guidance

document. Use care when handling approved phantoms for quality control testing so they are not scratched. Analysis of quality control testing results is vital to determine when service is needed. Consult your service engineers if any needed corrective action is identified. Proper review and documentation of service records and physicist surveys is essential to all quality programs. The importance of quality documentation and record maintenance cannot be underestimated. This documentation consists of date and type of testing, findings, identification of individual performing the testing and service, along with corrective actions of adverse findings.



History Documentation

An accurate interpretation result not only depends on the quality of the images but also on the quality of the patient records. Obtaining accurate historical and risk information is valuable for the radiologist to know prior to each final result recommendation. This requires a patient history form that is completed with each visit. This form becomes part of the patient medical record and having the patient initial or sign the form acknowledges the information gathered is correct as she knows it. The most basic questions to ask your patient is the reason for their mammogram and if they are experiencing any new symptoms. In addition, document the following: patient age, age of menses onset, last menstrual period, number of pregnancies, age of first pregnancy, use of and duration of hormone therapy, family and personal history of breast and/or ovarian cancer, personal history of breast surgeries or conditions, location, dates and outcomes of previous breast imaging. If breast feeding, screenings should be done when lactation has completely stopped, approximated three months after stopping is usually appropriate. If the patient is breast feeding and

diagnostic imaging is needed, your radiologist may suggest lactation just prior to the exam with documentation of such. Documentation requirements may vary between countries and facilities.

Determination of current symptoms should be asked at the time of scheduling the appointment to best determine if the patient falls into a screening or a diagnostic mammogram category. Do not confuse a new symptom with normal hormonal breast pain that comes and goes. At the time of the mammogram, ask and document the exact type of symptom/s the patient is experiencing, the duration of the symptom/s, and the side and location of the symptom/s using exact patient quotes for the description. Confirm with the patient that their physician is aware of these new symptoms. Mammographer documentation should include a diagram where you note the location of the findings and symptoms as well as what the patient describes to completed the history and aid the radiologist interpretation. Documentation requirements may vary between locations but it should always be professional, factual, to the point, and accurate. It is very helpful to document patient physical limitations to explain why you may not have achieved the best positioning. Examples may include: “Patient has a frozen shoulder and is unable to raise right arm.” or “Patient is kyphotic with limited neck mobility.”

Skin markers can be used for imaging and each shaped marker represents a specific meaning, i.e. a triangle, square or arrow may indicate the area of a symptom, a circle shows larger moles that may appear on the mammogram, and lines represent scars. Familiarize yourself with any facility guidance regarding the use of skin markers. If using skin markers to point out areas of symptoms, always have the patient point to where to place the marker or better yet, ask them to place the marker themselves. For the sake of accuracy, the

mammographer should not risk placing a marker in the wrong place. Utilize a marker key policy as helpful documentation for radiologists and employees so all know the definition of each marker shape.

Screenings are typically performed according to timeframes set up by screening programs on asymptomatic women for early detection. These screening program timeframes vary between different countries and health care organizations. Diagnostic mammography is typically considered if there is a new breast symptom or a new finding found on a screening or other imaging test. When men have symptoms a health care provider may order a diagnostic mammogram for them. Due to the low incidence of male breast cancer, men are typically not considered for screening although some countries may have specific guidelines regarding transgender breast imaging. It is essential to learn and understand what screening or diagnostic guidelines apply to your location.



Comparison Images

Having previous mammograms available prior to the time of interpretation is extremely helpful for the most accurate interpretation. Become familiar with your established policies or work with your radiologists to determine how many sets of previous mammograms they would like to have available. This number varies with some wanting only the most recent previous mammogram and some favor having up to three to four sets available. Studies show the more previous images compared to the new images, the more accurate the reading however, locating the previous and having them available from outside sites is challenging at times and can delay readings. There are different theories for obtaining previous images.

The most patient friendly process is to ask about the whereabouts of previous images at the time of scheduling and the facility starts the process of locating and sending the images so the previous images are available at the time of the patient's appointment. Some facilities make it the responsibility of the patient to locate and bring their previous images to their newly scheduled mammogram appointment. Others may wait till the patient is having her mammogram to inquire about past exams and locations and call for those to be sent after the exam is performed. This last option is less preferred as it is sure to delay the results. Timeliness of care is a quality factor and must be considered when developing your plan to obtain previous images for comparison to new images.



Reporting

Mammographers need to understand breast imaging reports as they review them prior to performing mammograms. Radiologist reports often contain special instructions or recommended diagnostic views. The reports should outline the patient's breast history and demographics with a description and assessment of any new findings along with a plan or recommend. Mammographers should become very familiar with their country's mammography reporting recommendations. One example, BI-RADS is an acronym for Breast Imaging Reporting and Data System. It is a quality assurance tool originally designed for use of mammography reporting by radiologists. The tool is a collaborative effort of several healthcare professional groups but is published and trademarked for use by the American College of Radiology (ACR). BI-RADS allows for a consistent practice for finding descriptions, assessments and recommendations so no matter where that patient goes for their breast health care, all understand the report. Use of this tool minimizes

variations and risk of errors while increasing overall reporting quality. The United Kingdom uses the PERFORMS, Personal Performance in Mammographic Screening program as a reporting training and self-assessment tool including radiologists and radiographers. Know the reporting rules and resources in your country.

Just as the strength of individual links of a chain adds to the overall chain quality, each aspect of quality mammography adds value and strength to the overall breast program.

Resources:

MAMMOGRAPHY QUALITY PROGRAM GUIDANCE



Mammography Positioning Quality Assurance Checklist

Technologist name: _____ Exam Date: _____ Exam ID #: _____

Yes	No	Task	
		MLO: pectoralis muscle adequately demonstrated	
		MLO: visualization of the inframammary fold	
		MLO: breast lifted appropriately	
		CC: all breast tissue pulled into view with perpendicular posterior nipple line without rotation	
		CC: lateral tail imaged sufficiently	
		Posterior Nipple line within 1 cm comparing MLO vs. CC views	
		Nipple in profile on at least one view with each breast	
		Lack of motion with adequate compression	
		Lack of artifacts or problematic skin folds	
		Documentation includes family and personal history, symptoms including duration and historical items of interest for radiologist's review	
		Technologist identification present	
		Correct facility and patient identification and image view labeled correctly	
		Previous images included per policy	
		Adequate technique factors- density, contrast, sharpness, exposure level etc...	
		Additional criteria:	

Radiologist or QC Mammographer Signature: _____

Date: _____

Performing Mammographer Signature: _____

Date: _____

Comments _____



Mammography Image Quality Critique

Performing Mammographer: _____

Patient Name: _____ **Pt ID #:** _____

Date of Exam: _____ **Screen / Diagnostic / Other** _____

Site Location of Exam: _____

.....

QA review date: _____ **Reviewed by:** _____

Views reviewed: _____

Positioning Comments: *(specify views in comments--- muscle, skin folds, nipple in profile, posterior nipple line measurement, excellent positioning, etc.)*

Technical Comments: *(specify views in comments--- identification, motion, compression, exposure level, contrast, sharpness, noise, artifacts, etc..)*

Worksheet / history completeness comments: *(note any missing or incomplete information that would have been helpful)*

Additional notes/ recommendation/ positive feedback:

MAMMOGRAPHY QUALITY PROGRAM GUIDANCE

 Month/ Day/ Year: _____		Performing Technologist: _____	
Pass	Fail	General Quality Checklist	Comments/ Testing Details/ Frequency
		Visual Phantom Integrity Check	
		Collimator Assessment	
		Light Field and Image Field	
		Smooth Compression Motion	
		Paddle, Face Shield Integrity- no cracks	
		Technique Chart Availability	
		Adequate Operator Shielding	
		Repeat/ Reject Analysis	
		Phantom Scoring *Analog or Digital *DBT/ Tomosynthesis	
		Beam Quality Assessment	
		kVp Accuracy and Reproducibility	
		Acceptable Average Glandular Dose	
		Resolution, Sharpness Assessment	
		<i>If digital:</i> Radiologist and Acquisition Workstation Monitor Quality Control	
		<i>If digital:</i> Radiologist and Acquisition Workstation Monitor Cleanliness	
		<i>If analog:</i> View box Assessment	
		<i>If CR:</i> Cassette Erasure	
		Smooth Motion of Tube-Receptor Assembly	
		Functioning Locks, Control Panel, Foot Pedal	
		Automatic Exposure Control Performance	
		Manufacturer Specific Quality Tests	
		Artifact Evaluation- unit free of dust	

Radiologist or QC Mammographer Signature: _____

Date: _____

References

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American College of Radiology, *Mammography Quality Control Manual*, 1999, 2018

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