Good Morning!

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Analytics IN ACTION

YOUR RANKING

Top 10% of Volpara users

Based on your overall team Volpara Quality scores

Positioning summary

26.0% 33.6% 39.1% 1.3%

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Team Summary

Volpara

Quality Score

Positioning

Compression

YOUR PROGRESS

15 / 20

of your techs improved or matched their Volpara Quality score

YOUR CONSISTENCY

YOUR RANKING

Top 10% of Volpara users

Based on your overall team Volpara Quality scores

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The Basics of Mammography You Were Never Taught

Louise C. Miller, R.T.(R)(M)(ARRT), CRT(M), FSBI, FNCBC
Director of Education, Mammography Educators

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U.S. FOOD & DRUG ADMINISTRATION

Radiation-Emitting Products

MQSA Insights

MQSA Insights Articles

MQSA National Statistics

Poor Positioning Responsible For Most Clinical Image Deficiencies, Failures

Mammography combines "the science of imaging and the art of positioning" [1]. Although there have been many significant and exciting changes to the technology of mammography since the passage of MQSA in 1999, including the introduction of full-field digital mammography (FFDM) and digital breast tomosynthesis (DBT), one aspect of mammography that remains unchanged and critically important is proper patient positioning.

Positioning is so important because only those portions of the breast which are included on the mammographic image can be evaluated for signs of cancer. Any portion of the breast which is not imaged cannot be evaluated, and cancers in those portions of the breast can be missed. In a 2002 study, the "[s]ensitivity [of mammography] dropped from 84.4% among cases with adequate positioning to 66.3% among cases with failed positioning" [2].

Poor positioning has been found to be the cause of most clinical image deficiencies and most failures of accreditation. In 2015, the American College of Radiology (ACR), the largest FDA-approved accreditation body (AB), found that of all clinical images which were deficient on the first attempt at accreditation, 92% were deficient in positioning. Also, in ACR-accredited facilities, 79% of all unit accreditation failures in 2015 were due to

Source: https://www.fda.gov/Radiation-EmittingProducts/MammographyQualityStandardsActsandProgram/FacilityScorecard/ucm495378.htm

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The Member Newsletter of the Society of Breast Imaging

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A Technologist's Perspective of the FDA Report "Poor Positioning Responsible for Most Clinical Image Deficiencies, Failures"

Louise Miller, R.T.(R)(M)

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Now is the time to make a collaborative effort to establish, improve and maintain quality in mammography positioning.

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QUALITY

ALL industries have established standardized methods for performance of tasks to:

- Establish and maintain quality
- Reduce errors
- Increase consumer satisfaction
- Increase profit
- Reduce possibility of litigation

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Approximately how many deaths occur each year due to medical errors?

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How do we reduce medical errors?

- Standardization
- Consistency
- Reproducibility

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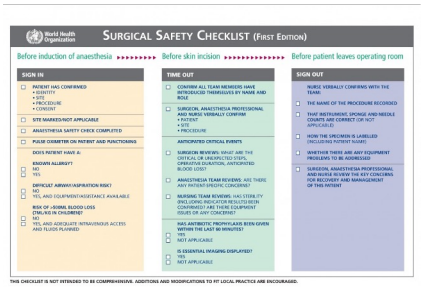

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Standardized Technologist Training For General Radiology

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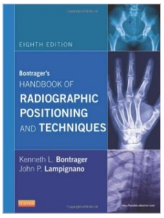
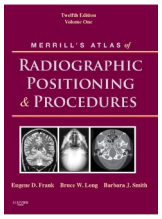
Bontrager's and Merrill's





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Standardization

- We all position the same way for every body part.
- We all position in the same sequence.
- We all set up the machine before we bring the patient in.
- We all position the whole patient, not just the body part.

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In General Radiology

All training is competency based; a technologist's skills will be evaluated for *positioning techniques*, as well as *clinical image evaluation.*

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Consistency and Ergonomics

- **M**achine
- **P**atient
- **B**ody Part (Breast)

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Consistency and Ergonomics

- **M**aking
- **P**ositioning
- **B**etter

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We must position the whole patient, not just the body part!

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In General Radiology

We use anatomical landmarks that are visible and palpable:

- Radial head
- Humeral head
- Sternal-clavicular notch
- CML
- OML
- ASIS
- Umbilicus

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In Mammography

We should also use Anatomical Landmarks that are Visible and Palpable:

- Perimeter of the breast
- Humeral head
- Sternal-clavicular notch
- IMF
- PNL
- VNL

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All exams are done using the *same* positioning technique, in the *same* sequence.

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WHY???

- Consistency
- Reproducibility
- Efficiency
- Proficiency
- Use of proper body mechanics

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But in mammography…
we are "all over the map."

- LCC, LMLO, RMLO, RCC
- RCC, LCC, RMLO, LMLO
- RMLO, RCC, LMLO, LCC
- LCC, RCC, LMLO, RMLO
- RCC, RMLO, LMLO, LCC
- LCC, LMLO, RCC, RMLO
- LMLO, LCC, RCC, RMLO

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Our suggestion:

- Do CC's first.
- Then do the MLO on the side you just finished the CC on.
- Finally, do the other MLO.

Example: RCC, LCC, LMLO, RMLO

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SO WHY IS THIS TRUE FOR ALL BODY PARTS IN RADIOLOGY **EXCEPT** IN MAMMOGRAPHY???

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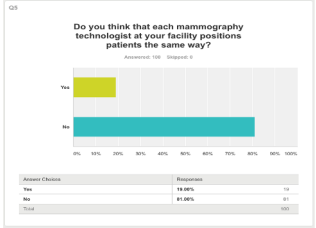
Most technologists *do not* practice a standardized method of positioning



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In Mammography

- Most technologists have not been taught correlative anatomy, so they do not understand how positioning techniques effect image quality.
- Most technologists know *what* they need to see on the images, but have not been taught *how* to correct positioning problems.

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In Mammography

- Most technologists have not been taught a standardized method of positioning.
- Most technologists have not been trained by a qualified trainer.

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In general radiology, sequence of views is standardized!!

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How did this happen?

- No current standardization for positioning for FFDM and DBT
- CEUs for hands-on positioning not required
- Initial 25 mammograms required but under whose supervision?

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How did this happen?

- Technologists are getting most CEUs online (no actual education for positioning).
- Radiologists are passing inadequate images and/or can only give feedback regarding positioning criteria.

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How did this happen?

- Updated positioning trainings are not provided by employers.
- Up until recently, there was no current published data available to establish parameters for positioning criteria.

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How did this happen?

- No updates for positioning with FFDM or DBT (and the new equipment design requires a modification of positioning techniques used for FS).

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FS/FFDM/DBT

- Increased length of the IR by up to 40%
- Increased thickness of the IR by up to 80%
- Increased width of face shield up to 50%

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How can we make things better?

CONSISTENCY AND REPRODUCIBILITY

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So the problem is:

- No standardization or follow-through
- Which means less consistency and reproducibility
- More repeats and rejects
- More accreditation failures
- Increased exposure
- MISSED BREAST CANCERS???

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MAMMOGRAPHY POSITIONING TECHNIQUES SHOULD BE…

- Based on ergonomic principles
- Efficient
- Proficient
- Consistent
- Reproducible

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Common Work Related Injuries for Mammographers

- Wrist problems
- Shoulder problems
- Back
- Knees
- Hips

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Do standardized positioning techniques work?

- Used consistently for 50+ years in Sweden
- Was taught by ACR in the 1990s
- Results published by Bassett et al in 1993 showed an improvement of 68% in image quality after ACR standardized positioning training
- Current preliminary data regarding standardized positioning techniques is impressive

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Standardized Training

Northwestern University 2012*

- After standardized training, they showed a **50%** reduction in technical call backs (for positioning, blur, etc.).

* Not published study

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What They Did to Affect Change:

- Developed a Train-the-Trainer* (TTT) program.
- Area technologists applied to participate in the program and were chosen by specific criteria.
- They received specialized training so that they can provide effective and proven positioning techniques to other technologists in underserved areas.
- Train-the-Trainer program successfully in place for 4 years.
- Plans for expansion to other major urban areas in US.

*Program designed and presented by Louise C. Miller, RTRM

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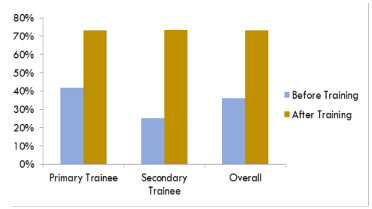
Does TTT program help improve the quality of images taken by participating mammography technologists?



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USE DATA!!

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Mammography Positioning Standards in the Digital Era: Is the Status Quo Acceptable?

Positioning criteria *following training for updated standardized positioning techniques* for FFDM and DBT far exceeds data on Bassett study.*

**Approved for publication by AJR, December 2017*

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Mammography Positioning Standards in the Digital Era: Is the Status Quo Acceptable?

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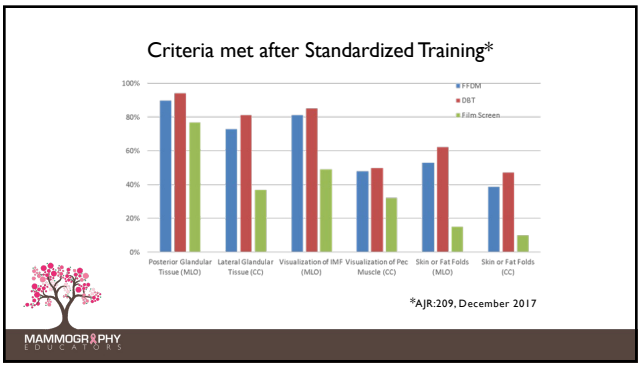

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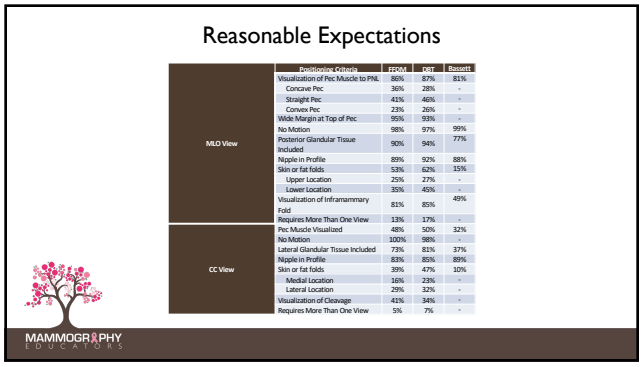

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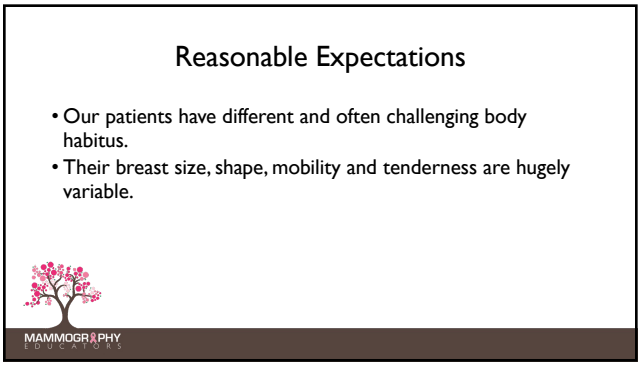

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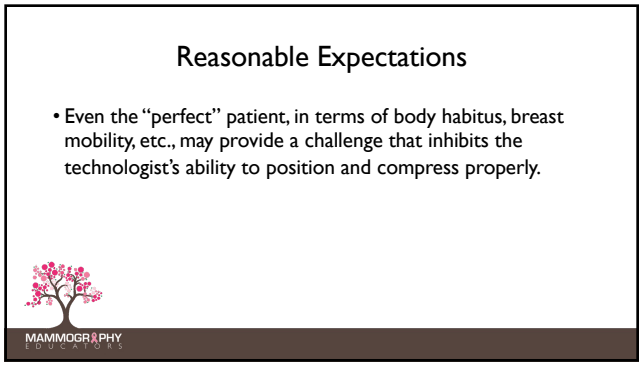

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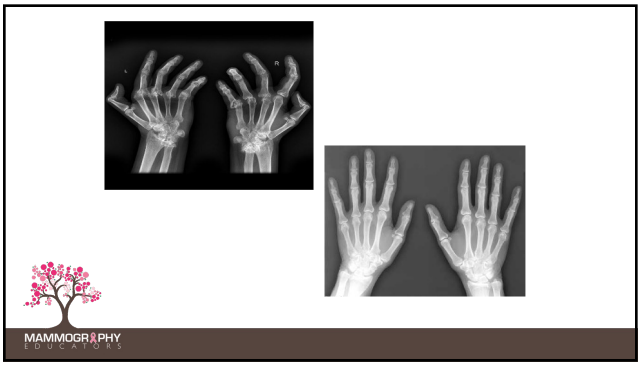

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Not every mammogram can be ACR perfect!

"What Every Technologist Would Like Their Radiologist to Know" – Part 1-3*

About Our Patients
About Our Images
The Role of the Technologist

*Published in the SBI Newsletters 2015 www.SBI-online.org

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But we CAN improve image quality by using standardized positioning techniques that are applicable for FFDM and DBT *and by* developing a strong knowledge based foundation that depends on the technologist's understanding of correlative anatomy.

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Does It Work?

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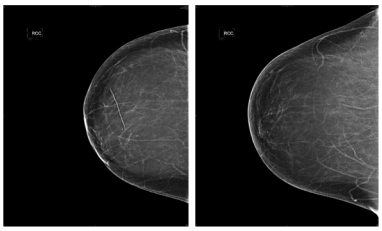

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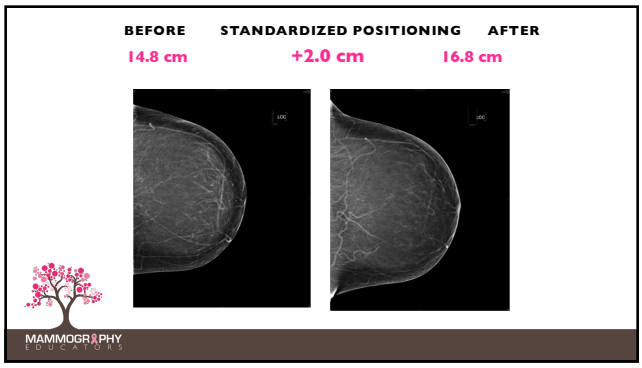

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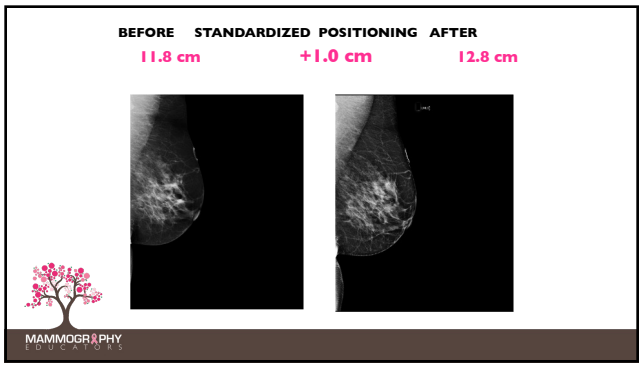

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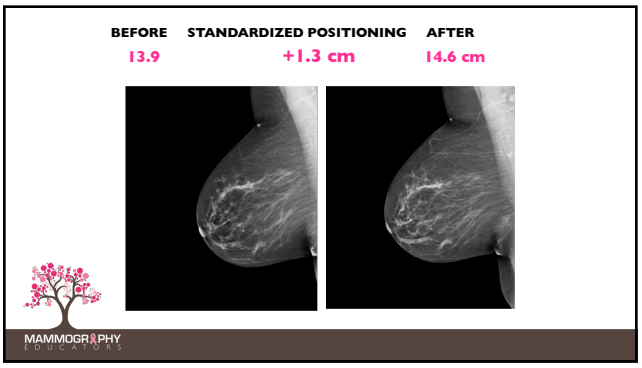

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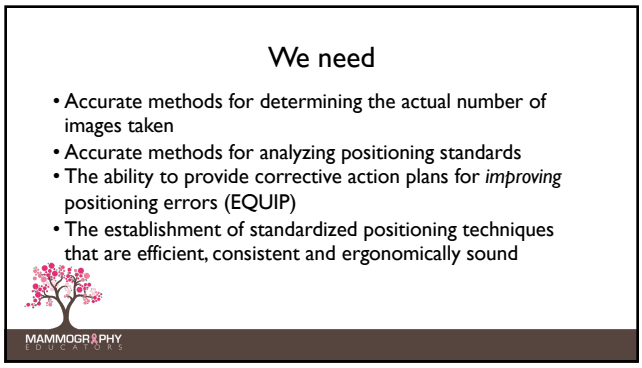

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It is OUR responsibility to make sure that ALL women receive the highest quality of mammogram achievable.

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Thank You!

Services we offer, include:

- Onsite Positioning Training
- Assistance with Accreditation & Inspection
- Live Webinars and Conferences
- On-Demand Continuing Education

For questions or more information:

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