Update of the Biopsy QC Manual

William Geiser, MS DABR FAAPM FACR
Senior Medical Physicist
MD Anderson Cancer Center
wgeiser@mdanderson.org

2022 Annual AAPM Meeting
Washington, DC

Who
- ACR Subcommittee on Mammography Physics
  - Chair: Tom Ruckdeschel MS
  - The rest of us
    - Michael Bonvento PhD, William Geiser MS, Allen Gooche MS, Todd Howe MS, Thomas Joyce MS, Janine Krum hways, MD, Liana Philpotts MD, Corley Williams MS, Ronald Wong Lui, Michael Peter PhD
- ACR Staff
  - Pamela Pitot, Scott Young, Dahn Geiss, Theresa Branham, Krista Busch, Jasmine Matarable

Layout
- Should be familiar 2018 DM QC Manual – 1999 SBBQC
- Physicians Section
- Technologists Section
- Medical Physicists Section

Supporting Documents
- ACR Practice Parameter for the Performance of Stereotactic/Tomosynthesis-Guided Breast Interventional Procedure - Revised 2020
- 1999 Stereotactic Breast Biopsy Quality Control Manual
- 2018 Digital Mammography Quality Control Manual

Physicians Section
- Major Components
  - Responsibilities
    - Supervising Radiologist
    - Physician
    - QC Technologist
    - Medical Physicist
  - Definitions of Quality Assurance and Quality Control
  - The need for Quality Assurance and Quality Control

Technologists Section
- QC Technologist Responsibilities
- Other Technologist Responsibilities
- Quality Control Tests and Frequencies
  - Objective of each test
  - Required frequency
  - Test Procedure
  - Spreads for each test to assist in documentation
### Localization Accuracy or Daily Accuracy Test
- Manufacturers required test
- How to test accuracy if the manufacturer’s phantom is lost or broken

### Medical Physicists Section
- Medical Physicists Responsibilities
- Quality Control Tests and Frequencies
- Test Objectives
- Basic Procedure for performing each test
- Tables describing testing for prone tables and upright add on systems
- Equipment Evaluations or Acceptance Testing vs. Annual Testing
- Physicist available vs. Physicist on site
- Develop spreadsheets for each test to assist with documentation

### Table of Required Tests for Acceptance Testing and Annual Testing
- All tests to be done at Acceptance Testing if they apply
- Some tests are optional at annual testing

### Tests required for Prone Tables or Standalone Systems
- Mimics the DM QC Manual

### Additional testing for add on biopsy systems if following DM QC Manual
- You need to repeat every test if already done when testing the system for MQSA

### Testing for add on systems if following manufacturers QC manual
- Some additional testing if the add on system supports DM guidance
**Tomosynthesis Option**

- QC for tomosynthesis is in the manual for now
- Accreditation program may not include it right away

**Image Quality**

- Will include all three phantoms
  - "Mini" Phantom
  - Old ACR Accreditation Phantom
  - New DM QC Accreditation Phantom

**Image Quality**

- Will include all three phantoms
  - "Mini" Phantom
  - Old ACR Accreditation Phantom
  - New DM QC Accreditation Phantom

**Mini Phantom**

- Required minimum score
  - 2.0 fibers
  - 2.0 speck groups
  - 2.0 masses

**Old ACR Phantom**

- Required minimum score
  - 4.0 fibers
  - 3.0 speck groups
  - 3.0 masses

**DM QC Phantom**

- Required minimum score
  - 2.0 fibers
  - 3.0 speck groups
  - 2.0 masses

**Average Glandular Dose**

- Use the Dance method for estimating dose
  - Include a scout view and a tomosynthesis view
  - Maintain the 3.0 mGy limit
Verification of Localization Accuracy

- Same test procedure
- If the technologist is not available to perform the test then use something like FaceTime, Zoom or WebEx to verify that the technologist is able to hit a target