

The FDA requires that new mammography modalities follow a QC program which is similar to the MQSA final rules for film-screen mammography. Early full-field digital mammography (FFDM) manufacturers fulfilled this requirement by publishing QC manuals which covered all the required medical physicist and technologist QC tests for their FFDM unit and the soft-copy review workstation and hard-copy laser printer used with that unit.

End users are now able to choose third-party soft- and hard-copy devices. Each of these third-party manufacturers has their own mammography QC requirements and documentation. A physicist surveying a FFDM unit may find many combinations of FFDM manufacturer and third-party manufacturer requirements for the hard/soft copy devices. A consulting medical physicist visiting multiple sites is especially likely to find a changing variety of combinations.

This talk will focus on mammography hard-copy devices, the laser printers. In recent years, FFDM users have moved away from hard-copy interpretation as they rely more exclusively on soft-copy interpretation. As a result, hard-copy QC is often overlooked. Hard-copy QC is still very important. Even though most digital mammograms are interpreted using soft-copy workstations, those exams submitted for accreditation are evaluated using the hard-copy images. Hard-copy images are still used to provide prior images for patients. Some sites also use hard-copy images for archival purposes. MQSA inspectors require FFDM sites to correctly implement hard-copy QC. It is important that the physicist and the mammography site perform and document the correct laser printer QC tests.

This lecture will review the various laser printer QC tests suggested or required by the major FFDM manufacturers and the major laser printer vendors. Suggestions will be offered on sets of tests which can be performed on most laser printers regardless of their manufacturers. Suggestions will also be made on surveys which will fulfill the requirements of nearly all manufacturers. Such surveys may include tests which are not required for the laser printer tested but are simple to perform.

Educational objectives:

1. Understand the laser tests required by FFDM manufacturers.
2. Understand the QC tests required by various laser printer manufacturers.
3. Understand which QC tests are most useful in troubleshooting hard-copy problems.