

Lack of national and international standards for quality control for digital mammography dictates that users have to follow manufacturer's recommendations. This leads to significant additional work for facilities with digital mammography systems from multiple vendors. Therefore, a comprehensive and unified quality control test for medical physicists and mammography technologists was developed for the Screening Mammography Program of British Columbia (SMPBC), in collaboration with Ontario Breast Screening Program with the intent of using them as a national standard in Canada.

The quality control tests developed for the ACRIN DMIST study were used as the starting point for the new tests; however, due to the recent implementation of AEC algorithms by some manufacturers, it has become difficult to use the uniform phantom suggested by DMIST work. To address this, a simple 19 cm diameter semicircle uniform phantom was designed. Furthermore, it was found that the technologist weekly image quality test should be performed on "FOR PRESENTATION" images so that changes in image processing algorithms (similar to changes in film processing conditions) can be identified. IHE Mammography Integration Profile compliance was also included as part of the Medical Physicists tests.

The new unified quality control procedures have been adopted as the standard in the province of BC for more than two years. This unified approach has made it possible to streamline and manage the quality control of screening mammography facilities within the province. The technologist weekly image quality test done with "FOR PRESENTATION" images instead of "FOR PROCESSING" images (as suggested by ACRIN DMIST study findings) have uncovered changes in image processing algorithms that were implemented by manufacturers without the knowledge of the users. The new semicircle uniform phantom is found to be suitable for testing the AEC performance of every digital mammography unit used in the province of BC.

Due to the success in the use of the new unified QC tests in the province of BC, we are in the process of promoting this as a national standard for digital mammography quality control in Canada.

This presentation will provide an overview of the development and implementation of these vendor neutral unified quality control procedures and its advantages.

#### Learning Objectives:

1. Understand the type of testing required for Digital mammography systems.
2. Understand the advantages of a unified QA procedure.
3. Understand some of the technical and logistical issues involved in implementing vendor neutral QA procedures.
4. Understand the importance of using IHE Mammography Integration Profile as part of the Medical Physicist testing.