Provincial Health Services Authority

# REVIEW WORKSTATIONS PRACTICE GUIDELINES: BREAST SCREENING

(Quality Management – SG-DG 400)

## Summary of Changes

| | NEW | Previous |
|---|---|---|
| **BC Cancer** | | June 2008; February 2013 |

# 1. Introduction

## 1.1. Focus

The focus of these guidelines is to provide guiding principles for review workstation(s) (RWS) at breast screening centres and Home Reporting Settings used by the Breast Screening Program screening radiologists (Screeners).

## 1.2. Health Organization Site Applicability

All breast screening reading centres

## 1.3. Practice Level

Breast Screening:

- Program Chief Radiologists
- Centre Managers
- Program Screening Radiologists
- Program Chief Technologists
- Quality Assurance Support Group

## 1.4. Definitions

**Home Reporting Setting**: A personal environment (i.e. Radiologist's home office) located outside of the conventional centre-based reporting environment.

**Home Review Workstations**: A RWS used for reporting participant studies through PACS/RIS and MagView systems, established in a home reporting setting

## 1.5. Need to Know

For changes to software upgrades or changes to RWS equipment, refer to SG-DG 700 - Software Upgrades to Breast Imaging Systems Procedure.

## 1.6. Equipment and Supplies

Review Workstation(s) (RWS) and monitors

# 2. Practice Guidelines

## 2.1. Review Workstation (RWS) Requirements

The BC Cancer Breast Screening Program requires that all RWSs used for interpretation of screening mammograms shall support the IHE Mammography Image Profile as the "Image Display" actor as well as follow integration profiles as the "Evidence Creator" actor: IHE Mammography Image Profile and IHE Consistent Presentation of Images Profile[1].

The monitor(s) used for a RWS shall be a Health Canada or FDA mammography approved single large 10 MP or a pair of 5 MP grayscale monochromatic (colour functionality optional) LCD monitors. The following minimum specification requirements shall be met SIMULTANEOUSLY [2,3]:

i. Pixel pitch: Approx. 0.2 mm (>0.15) – as specified by manufacturer
ii. Bit depth: ≥12 bits (minimum display of 4096 levels of grey);
iii. Ambient room illuminance: 25 – 75 lux;
iv. Ambient room luminance: ≤0.25 Lmin;
v. Luminance ratio: 250 – 450;
vi. Luminance response (including screen reflection contribution) must not deviate from the DICOM GSDF by more than 10% - (Grey scale calibration);
vii. Min luminance (including screen reflection contribution): ≥1.2 cd/$m^2$;
viii. Max luminance (including screen reflection contribution): 450 cd/$m^2$ (must be ≥350 cd/$m^2$);
ix. Uniformity: <30% difference in luminance between display centre and corners;
x. Artifact free.

The RWSs shall provide user selection of image sequences (hanging protocols for current and prior studies).

Program recommended digital Quality Control (QC) procedures must be followed for all workstations and printers used for digital mammography[2,4].

If the RWSs are used to export digital mammograms upon request, the RWSs shall support the IHE Portable Data for Imaging Profile as the "Portable Media Creator" actor[1].

As indicated in SG-DG 600 - Digital Mammography Image Display and Archiving Practice Guidelines, all current images must be viewed at 1:1 (full resolution) at some point during interpretation. Hanging protocols should be designed accordingly.

The screener must maintain best practices of screening, such as appropriate reporting environment, availability of prior imaging, and batch reporting[5], as outlined in SD 010 - Screener Interpretation of Mammogram Procedure.

### 2.2. Assessment

All Reading Centre workstations used for program reporting must undergo initial acceptance testing by a program physicist, as well as receive an annual physicist assessment as per CAR-MAP accreditation standards.

All home reporting workstations used for program reporting must undergo initial acceptance testing by a qualified medical physicist, as well as receive an annual physicist assessment.

Qualified physicists may be identified by consulting:

**Website:** https://ccpm.ca/_uploads/60c771a26d56b.pdf
**E-mail:** screeningadmin@bccancer.bc.ca

## 3. Related Document and References

### 3.1. Related Documents

Request for proposal (RFP) guidelines for Full Field Digital Mammography (FFDM) systems and soft copy display workstations are available from the Breast Screening Quality Assurance Support Group.

SD 010 – Screener Interpretation of Mammogram Procedure

SG 200 – Chief Screener Selection

SG-DG 210 – Home Reporting Procedure

SG-DG 600 – Digital Mammography Image Display and Archiving Practice Guidelines

SG-DG 700 – Software Upgrades to Breast Imaging Systems Procedure

### 3.2. References

Integrating the Healthcare Enterprise, IHA Technical Framework Volume I, 2007.

https://www-pub.iaea.org/MTCD/publications/PDF/Pub1482Files/Annex_3_IHE_MammoExtract.pdf

Berns EA, Pfeiffer DE, Butler PF, et al. Digital Mammography Quality Control Manual. Reston, Va: American College of Radiology; 2018. https://www.acr.org/-/media/ACR/Files/Clinical-Resources/QC-Manuals/Mammo_QCManual.pdf

AAPM Report 270: Display Quality Assurance. American Association of Physicists in Medicine; 2019. https://www.aapm.org/pubs/reports/RPT_270.pdf

Martin J. Yaffe, Aili K. Bloomquist, and Gordon E. Mawdsley et al. "Quality control for digital mammography: Part II recommendations from the ACRIN DMIST trial", Medical Physics 33:737-752 2006.

Addressing the Abnormal Call Rate in Breast Imaging, Canadian Association of Radiologists. 2021. https://car.ca/news/addressing-the-abnormal-call-rate-in-breast-imaging/

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| **Final Sign Off:** | **Name** | **Title** | **Date Signed** |
| | Dr. Charlotte Yong-Hing | Medical Director –Breast Screening | 02-FEB-2024 |
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| | Breast Screening Quality Management | Breast Screening Program | PHSA-BC Cancer |
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| **Owner(s):** | Breast Screening Quality Management Committee | Amanda Hunter, Provincial Practice Leader | Breast Screening Program |
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| | Amanda Hunter | Terminology and Formatting, removal of film printer practices addition of Home reporting workstation standards. | 15-JAN-2024 |
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