The Canadian Society of Breast Imaging (CSBI) and the Canadian Association of Radiology (CAR) Guidelines for Breast Imaging during the COVID-19 Pandemic

April 2, 2020

Universal precautions should be taken to protect health care workers from infection or disease spread during breast imaging procedures, particularly mammography, breast ultrasound, breast MRI and breast intervention procedures, such as biopsy, during the pandemic outbreak of COVID-19 in Canada. The close proximity of both the patients' and healthcare workers' faces during these imaging procedures raises concern for droplet contamination in addition to blood spatter contamination, which may occur during image-guided interventions (e.g. breast biopsy) and spread by saliva through talking during imaging. These precautions extend to ALL patients, not just those with clinical symptoms or proven COVID-19 as undocumented infections facilitates the rapid dissemination of novel coronavirus (1). The following protective measures are recommended:

1) <u>Personal Protective Equipment (PPE):</u>
    a. Staff should be encouraged to follow Health Canada and WHO guidelines for appropriate use of PPE (2). Given the novelty of the disease, the increasing incidence and new information on potential transmission from asymptomatic patients (1), we adapted those guidelines in the context of breast imaging.
    b. It is important to optimize the use of PPE. While it is recognized that there may be a PPE shortage, staff safety must not be compromised.
    c. If PPE is not available or potential shortage for higher risk procedures is anticipated, recommend not performing the procedure until available.
    d. All patients (regardless of symptoms) should wear level 1 (low fluid resistance) surgical masks (not N95), preferably donned upon arrival to the waiting room or centre. This allows protection for others from respiratory droplets and saliva, which are known to be the chief mechanisms of infectivity for COVID-19 (2, 3, 4).
    e. All staff working closely and having physical contact with breast imaging patients should wear at minimum level 1 surgical masks, gowns (2, 3, 4, 5, 6), and disposable gloves and should strongly consider visor or goggle protection (2, 3, 4, 5, 6). The use of sterile gloves is mandatory for physicians (radiologists) performing interventional procedures with any kind of patients. Masks may be worn for several hours and are useful unless touched or wet.
    f. Where isolation gowns are not readily available, consider using patient gowns over clothing or scrubs.
    g. N95 masks (high fluid resistance) are only required for aerosolizing procedures in confirmed or suspected COVID-19 patients. Beside procedures in patients with

Continuous Positive Airway Pressure (CPAP), Bi-level Positive Airway Pressure (BiPAP), high flow nasal oxygenotherapy, and patients with a tracheostomy, there is no procedure in breast imaging at risk for aerosol generation. Refer to CAR/CAIR and CAR/CSTR guidelines for further details (7, 8).

h. Given the potential for limited availability of PPE and recognizing that selective use of high priority breast imaging will be performed, the safety of staff is paramount. A minimum of two surgical masks is required for each technologist, sonographer, and radiologist per day. The use of a face shield for radiologists and technologists that can be cleansed and reused is strongly encouraged and considered essential for all breast interventional procedures. All attempts should be made to minimize the number of staff present for procedures to preserve PPE.

i. Close adherence to physical distancing with regular hand washing and cleaning surfaces is required in between each patient contact.

2) Home/offsite review by radiologist:

a. Although not ideal, home review by radiologists should be considered where there is a shortage of manpower in breast imaging, however, 5-megapixel screens should be used for primary interpretation. Anyone interpreting mammography from home should be accredited by the Canadian Association of Radiologists Mammography Accreditation Program (CAR MAP) and already in good standing with their home workstations (9). If not MAP accredited, radiologists should follow specifications as outlined by https://www.acr.org/-/media/ACR/Files/Practice-Parameters/Dig-Mamo.pdf (10). This means that a physicist must calibrate monitors once per year.

b. During manpower shortages consider re-deploying some office 5-megapixel screens to radiologists in quarantine or isolation. Diagnostic patients should not be released until the radiologist has fully reviewed the case and has completed the evaluation in discussion with the mammography technologists and ultrasound technologists / sonographers. Video clips should be used liberally when performing remote breast ultrasound.

3) Low priority breast imaging should be postponed until distancing recommendations have been lifted. In particular, please postpone requests for evaluation of:

a. Breast screening, as already outlined in the CAR/CSBI guideline (11).

b. Annual surveillance in breast cancer survivor.

c. Any breast pain as the only symptom, especially cyclical and bilateral.

d. Low suspicion screening recalls (e.g. small groups of calcifications, small circumscribed lesions, single view asymmetries) after review of the breast imaging by a radiologist.

e. Biopsies of low suspicion BI-RADS 4A lesions (recommend these be reviewed by one or more radiologists to determine if biopsy can, indeed, be delayed).

f. Low suspicion diagnostic evaluation of elderly patients to avoid infection in the most vulnerable population.

g. Short interval follow-up (BI-RADS 3).

h. Young patients (e.g. <25 yo) with low suspicion lesions, likely fibroadenomata.

i. Males with tender retroareolar breast masses, likely gynecomastia.

j. Women at any age to evaluate integrity of breast implants.

k. Proven cysts for drainage.

This may require training of booking staff to reject these types of requests and scripted discussion with referrers. Radiologists will be required to assist in triage at times. Occasionally, this will provide an opportunity for the radiologist to communicate directly with the referrers to discuss the requirement for delaying these examinations.

4) <u>High priority breast imaging:</u>

a. This should not be considered emergency imaging. Imaging should be delayed if a patient is affected by COVID-19, has symptoms of COVID-19, has returned from recent travel and is within the 14 day isolation period, or has a family member or close contact affected by COVID-19 illness. If any of these situations applies, the breast imaging appointment should be delayed by 14 days or as directed by local public health authorities.

b. The exceptions that may require more urgent imaging include:

i Breast abscess, hematoma or infected seroma for drainage.

ii Clinical suspicion of inflammatory or locally advanced breast cancer.

iii Suspicion of breast cancer in a pregnant woman to determine management.

iv Any case discussed at Multidisciplinary conference that is determined to be critical for management decisions (12).

c. High priority breast imaging applies to any of the following symptoms:

i New palpable lump or breast thickening that is clinically concerning.

ii New bloody or watery (not milky) nipple discharge.

iii New axillary mass or lump or new onset lymphedema.

iv New skin dimpling or tethering or “peau d’orange”.

v New nipple inversion.

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10. ACR-AAPM-SIIM Practice Parameter for Determinants of Imaging Quality in Digital Mammography. at https://www.acr.org/-/media/ACR/Files/Practice-Parameters/Dig-Mamo.pdf

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