

Implementation of Whole-Breast Screening Ultrasonography

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KEYWORDS

• Dense breasts • Screening breast ultrasonography • Supplementary screening

KEY POINTS

- Understanding how to implement whole-breast screening ultrasonography requires consideration of many variables.
- Education of staff, patients, and referrers is essential for smooth transitions and to ensure high-quality scanning.
- Screening ultrasonography may be hand-held or automated, and performed by physicians or technologists.
- Choosing real-time or batch reading is a balance of time and resources.
- Radiology billing codes for ultrasonography have been updated and are reviewed here.

INTRODUCTION

Conventional two-dimensional (2D) mammography in dense breasts has known limitations: early studies showed sensitivity decreasing to 30% to 48% in dense breasts compared with 80% to 98% in fatty breasts, with a more recent study showing 57.1% sensitivity in dense breasts and up to 92.7% in fatty breasts.¹⁻³ Dense breasts are common, with 31% to 43% of women categorized as dense at screening mammography.⁴ In a study of 335 screening ultrasonography-detected cancers, 81% (272 out of 335) were not seen at mammography, even in retrospect.⁵ Consequently, supplemental screening modalities such as whole-breast screening ultrasonography have been explored as complementary tools to improve performance outcomes of breast cancer screening. In addition, whole-breast ultrasonography screening is an alternative modality to

MR imaging for additional screening of high-risk patients for whom MR imaging cannot be performed. Multiple studies have shown that whole-breast screening ultrasonography, as an adjunct to 2D mammography, results in detection of 3 to 4 additional cancers per 1000 women screened.⁶⁻¹¹

As of this writing, 27 states have passed breast density notification laws and the public is increasingly aware of how breast density affects cancer detection and its association with increased breast cancer risk. Breast imaging centers are increasingly incorporating supplemental screening modalities, such as screening whole-breast ultrasonography (SWBUS), into their service lines. This article discusses how to implement a robust SWBUS program, from educating referrers, patients, and staff, to deciding who performs and how to perform whole-breast screening ultrasonography, and achieving efficient scheduling and billing.

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EDUCATION***Educating Referring Health Care Providers***

More and more states are passing dense breast notification laws. Before any new law comes into effect, it is important to communicate with referring health care providers so they can be aware of upcoming changes in the law and be equipped to have informed discussions with patients. For example, outreach by breast imagers at local obstetrics-gynecology and/or internal medicine society meetings can serve as a means to review the clinical rationale behind dense breast legislation and provide an effective way to address the immediate questions and concerns from colleagues of other clinical specialties.

In addition, formal letter communication to referring providers before starting an SWBUS program may be helpful. This letter should include the breast density inform text, which is often stated in the patient's lay letter, so referring providers are aware of the level of information that will be given to their patients. It can clarify what breast density means: that density is based on the mammographic assessment, not palpation of lumpy tissue. Key benefits and risks of SWBUS, including the possibility of false-positives, can be reviewed. The importance of assessing each patient's risk status to determine the optimal supplemental screening modality for high-risk and even intermediate-risk patients can also be emphasized. Importantly, it can underscore that SWBUS is an optional supplemental screening tool, and is not intended to replace mammography.

Multiple randomized controlled trials have shown mortality reduction with mammography,

and so this remains the primary screening modality for breast cancer screening.¹² Patients determined to be high risk should undergo supplemental breast MR imaging, not SWBUS.¹³ Reflexive referral of all women with dense breasts for SWBUS is also discouraged. The choice to undergo SWBUS should be a shared decision involving the patient, made after open discussion of the benefits and risks of SWBUS, and is a key point to convey to referring colleagues (**Box 1**).

Educating Patients

Letter communication to all existing patients before the dense breast law enactment can also help prepare them for upcoming legislation. Once the law is in place, the patient lay letter notifies patients if they are dense and includes information on supplementary screening options. A recent study has found that some notification wordings are written at the high-school reading level and are thus too complicated for the general public to comprehend.¹⁴ This underscores the importance of encouraging patients to have open discussions with their physicians regarding breast density.

Educating Technologists

With technologist-performed whole-breast ultrasonography, it is possible to either have a mammography technologist or an ultrasonography technologist specially trained in breast ultrasonography. Cross-training mammography technologists in breast ultrasonography can be advantageous because these technologists already possess a fundamental knowledge of breast anatomy and

Box 1**Key points to give referring providers when informing them of the breast notification law enactment**

- Dense breast inform text (verbiage may vary depending on state).
- Screening ultrasonography is optional and usually only appropriate in patients with heterogeneously dense or extremely dense tissue.
- High-risk patients (>20%–25% lifetime breast cancer risk; BRCA1 or BRCA2 gene mutation; untested with first-degree relative with BRCA1 or BRCA2 gene mutation; radiation therapy to the chest at ages 10–30 years; Li-Fraumeni, Cowden, or Bannayan-Riley-Ruvalcaba syndrome, or first-degree relatives with one of these syndromes) should undergo annual mammography and MR imaging.¹² Women do not need both supplemental screening MR imaging and ultrasonography.
- High-risk women who cannot tolerate supplemental MR imaging screening may benefit from SWBUS.
- It is important for women to understand that dense tissue is defined by mammography, not palpation.
- Screening ultrasonography is associated with the risk of false-positive results and the possibility of requiring a biopsy of a suspicious finding that ultimately proves to be normal.
- Early detection of small, node-negative, invasive tumors may result in better treatment options and reduce the chance of developing an interval cancer, which tends to be more aggressive.

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