Breast Density: Helping Women Learn More

By Roy Prager, MD

Thus far, 28 states have passed laws requiring that women receive a dense breast notification (DBN) following mammography. DBNs are designed to inform women about their breast density and how it can affect the detection of breast cancer. Some DBNs also report whether the patient has an increased risk of developing breast cancer and if supplemental screening tests are necessary.

As more states continue to enact these laws, DBNs will be increasingly positioned as an important component of breast cancer screening. Given that 40% of women have dense breast tissue that can mask cancer during mammography, this legislation has the potential to help thousands of women find cancer earlier, when it may be more easily treated.[1]

Results Often Vary

While the potential advantages of DBNs are clear, the jury is still out regarding how effective they have been. Research related to the impact of DBNs in the US shows wide variation in both standards and impact. For example, a recent study published in the *Journal of the American College of Radiology* suggests that DBNs have been successful in educating women about breast density in New Jersey.[2] Study authors found screening ultrasounds increased by 651% in the 18 month period after the law was enacted, compared to the 18 month period prior to the passage of the law (1,530 vs 11,486). They also found MRIs increased by 59.3%, which reduced the number of

biopsies needed per cancer diagnosed. Study authors discovered that more cancers were detected following passage of the law (621 vs 592), and that 26% of those cancers were identified in patients aged 50 and younger (162 patients out of 621). This suggests that more women with dense breasts are recognizing the need for supplemental screening and that it is helping to identify cancers in these women earlier.

Studies in other areas, however, suggest DBNs may be less effective in helping women understand the relationship between breast density and the risk of developing cancer, and that impact can vary from state to state. Efforts to address these inequities may be as simple as improving the DBNs that are sent to patients following mammography. According to a recent study published in the *Journal of the American Medical Association*, the language used to explain breast density in DBNs in many states is often overly complex, clinical, and well above the average reading level for residents of that state.[3] In some cases, the DBNs do not clearly outline appropriate next steps for women who might benefit from additional screening following a standard mammogram, and the level of detail can vary significantly. For example, some states require that women be informed if their breasts are dense and that additional screening might detect breast cancer, while others require only that women be informed about the issue of breast density without providing context regarding the potential implications.

The variability in DBNs is leading many experts in women's health to call for new national standards in communications regarding breast density. While establishment of a national standard for breast density assessments and subsequent DBNs may be an effective solution, it is important to remember that these communications should not be positioned to replace a dialogue between patients and doctors. They should instead support more frequent and accurate discussions on this important topic between patients and clinicians.

New Technology Offers Advanced Solutions

It is also important to note that a DBN can only be as effective as the breast density assessment itself. A recent study published in the *Annals of Internal Medicine* confirmed that breast density assessments can vary significantly from one radiologist to another.[4] The American College of Radiology (ACR) recommends the BI-RADS lexicon as a standardized system to categorize breast density when reading mammography and instructs radiologists to include this information in the mammography report. But even with a standardized system there can be significant reader variability. Thus, the same patient might be assigned to different density categories when assessed by different radiologists.

New technology and software programs could help radiologists overcome

challenges associated with reader variability by providing a more precise and consistent density assessment. Radiologists at Women's Imaging of New Jersey recently adopted an automated breast density solution that uses an appearance-based approach to deliver automated, rapid, and reproducible assessments of breast structure, texture, and fibroglandular dispersion. It works by analyzing digital mammograms, calculating the patient's breast density, and determining the appropriate density category corresponding to ACR BI-RADS standards. The level of consistency achievable using this technology could help to more accurately identify patients who could benefit from additional screening including ultrasound or MRI.

In our practice, we perform approximately 7,000 mammograms each year, so accurately and efficiently reporting breast density is critical. Since implementing the appearance-based solution in July 2016, our team has significantly streamlined workflow while improving confidence in our breast density reports.

As new technologies emerge and more states work to improve and standardize the information provided in their DBNs, patients and radiologists are gaining a better understanding of breast density and its impact on the risk of developing and detecting breast cancer. These advancements are positioned to help more women understand this health issue and make better informed treatment decisions in the years ahead. ☢

References

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