Title
What Do the European Breast Cancer Screening Guidelines Portend for U.S. Practice?

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What Do the European Breast Cancer Screening Guidelines Portend for U.S. Practice?

Women and clinicians are faced with many "guidelines" for breast cancer screening and must sift through a range of diverse recommendations. The European Breast Guidelines, summarized by Schünemann and colleagues (1), are different: They were developed by an international panel of 28 multidisciplinary members who reviewed the quality of evidence on breast cancer screening in the context of European organized screening programs. What do these guidelines mean for women and clinicians in the United States? Although some aspects of the European Breast Guidelines might be less relevant in the United States, given differences in clinical practice, the challenges of supporting an informed screening decision remain the same.

The European Breast Guidelines generally agree with the recommendations of other major guideline groups (such as the American College of Physicians and American Cancer Society) (2, 3), whereas they diverge from others (such as the American College of Radiology and American College of Obstetricians and Gynecologists) (4, 5). A major difference is that the European guidelines recommend screening less frequently (for example, they recommend against annual screening given the balance of harms over risks). Another difference is that the group does not recommend screening for women aged 40 to 44 years but does recommend screening every 2 to 3 years for women aged 45 to 74 years. In addition, the European guideline group does not recommend tailored screening with automated or hand-held breast ultrasonography or magnetic resonance imaging for women with high breast density, nor does it recommend digital breast tomosynthesis or 3-dimensional (3D) mammography for screening.

Whereas the authors of the European Breast Guidelines address the diversity among European countries, more than an ocean separates the United States from Europe with regard to screening policies and practices. Breast cancer screening practices in European countries differ sharply from those in the United States. For example, Europe's cancer screening programs usually are considered "organized" as a result of its single-payer health systems, in contrast to what has been termed "wild-type" screening in the United States, where women must navigate health systems and variable insurance coverage for 3D mammography and diagnostic imaging after receiving an abnormal screening result. In addition, double reading, in which screening mammograms are interpreted by 2 radiologists, is done in most European countries, and this practice is noted to be more accurate than the single reading performed in the United States. Indeed, the false-positive rate is 2 to 3 times higher in the United States than in some European countries (6). The European Breast Guidelines therefore are based on a consideration of evidence as it relates to their practice of biennial or triennial screening with double reading versus the annual screening with 1 reader, as is typical in the United States.

For women with high mammographic breast density and negative screening mammography results, the European Breast Guidelines do not suggest tailored screening with automated or hand-held breast ultrasonography or with magnetic resonance imaging. This recommendation aligns with most U.S. screening guidelines, which also state that more evidence is required before supplemental screening is expanded to include all women with dense breasts and no other factors that would increase their lifetime risk for breast cancer.

The European Breast Guideline group did not find sufficient data to recommend 3D mammography for screening examinations. However, its recommendations to use 2-dimensional (2D) rather than 3D mammography for routine screening does not align with current U.S. practice. Nearly two thirds of U.S. facilities certified by the Mammography Quality Standards Act now have 3D mammography units (7). Three-dimensional mammography is quickly becoming the screening method of choice in the United States: Reverting to 2D mammography screening while reserving 3D mammography for only diagnostic imaging would be an unrealistic practice change in the United States, as well as in some European countries that have already adopted nationwide 3D mammography screening. Three-dimensional mammography may perform differently in the context of annual single-read screening (vs. biennial double reading, as performed in Europe); thus, 3D mammography has the potential to be more beneficial in the United States, because performance in a single-reader environment is less accurate at baseline.

Of interest, the European Breast Guidelines have expanded their scope to include the diagnostic work-up period, recommending the use of 3D mammography after a screening abnormality is detected. This recommendation is a departure from most other screening guidelines, which address only the screening examination. However, we agree that the entire screening episode should be assessed, with recommendations that include appropriate, timely work-up; therefore, the European guideline group's consideration of the full screening episode of care is laudable.

Overall, the European Breast Guidelines juxtapose and amplify 2 key differences between organized European screening programs and U.S. practices that should be considered (or reconsidered). First, less frequent screening is recommended in Europe, perhaps in part because of the higher accuracy of double reading. With recent technologic advancements, double reading may be feasible in the United States if per-

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formed by subspecialty-trained breast imagers using robust teleradiology capabilities, or with emerging artificial intelligence technology used for the second reading (8). We say this cautiously and with knowledge that traditional computer-aided detection was used in almost all screening mammograms in the United States during the past decade, at great cost and without additional benefit (9).

Second, the European Breast Guidelines also highlight a need for U.S. breast cancer screening policymakers to renew their focus on decreasing differences in the quality and outcomes of the diagnostic imaging work-up after an abnormal screening result. Unlike the European group, U.S. governing bodies stop their recommendations at the screening stage. However, wide variation probably exists in U.S. practices after a screening abnormality is found, including differences in the availability of 3D mammography for diagnostic imaging and onsite image-guided biopsy services, which may lead to disparities in screening-related outcomes (10). Thus, moving forward, the entire screening episode should be addressed in U.S. screening recommendations.

These new guidelines probably will do little to settle the ongoing debate in the United States over when to start mammography screening, what imaging method to use, and how often to screen. However, the European Breast Guidelines do provide insights into how we can use the knowledge gained from organized screening to identify areas and avenues for improving the quality and accuracy of breast cancer screening in the United States.

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