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# Mammography Screening for Breast Cancer

## A View From 2 Worlds

Anne M. Murphy, MD

**M**ANY BREAST CANCER SURVIVORS AND ADVOCATES were vocal and skeptical in response to the new US Preventive Services Task Force (USPSTF) recommendations on breast cancer screening.<sup>1</sup> Members of the advocacy community have spent countless hours to raise awareness about breast cancer and to help provide access and services to those without sufficient insurance. Given this degree of dedication, it is understandable that response to the release of the USPSTF recommendations was so passionate. As a member of this community and also of the academic medical community, I understand the controversy about the current state of screening and prevention but also recognize that the issue is complex and nuanced and will require the attention and efforts of clinicians to provide the best individualized care for their patients.

Mammography is far from an ideal screening test. It lacks the sensitivity and specificity of an ideal screening test and is particularly problematic in younger women. Even though the likelihood of breast cancer diagnosis and the risk of death from breast cancer are lower for women in their 40s than in older women, breast cancer remains the second leading cause of cancer death in women overall and many of these deaths occur in women in their 40s.<sup>2</sup> An article published with the USPSTF guidelines analyzed data that suggests death from breast cancer can be reduced by providing mammography screening to women in their 40s; however, it appears the effect is modest compared with older age groups, and the risks of false-positive screening results are higher.<sup>3</sup> However, several key issues must be considered: what are the potential harms from screening women in their 40s and how can they be lessened, and how will clinicians in practice assess women to determine whether they are at higher risk of breast cancer?

Given the limitations of mammography as a screening test, but a strong desire of women to achieve early diagnosis of breast cancer, several practical approaches are needed. Clinicians and those who speak to the public need to be hon-

est in conveying the potential benefits and risks of mammography for screening, particularly in 40- to 49-year-olds. All women should have the opportunity to discuss the potential benefit and risk of screening mammography with their clinicians to arrive at an individualized decision about care. Assessment of whether a woman in this age group has average or above average risk would include an individual history in regard to age of onset of menses, age at child-bearing, and prior history of biopsies, and possibly the use of tools such as the Gail model, although as mentioned in prior clinical guidelines this tool was developed for determining population risk rather than strictly for individual risk.<sup>4</sup>

Assessment of risk should also include reviewing a 3-generation family history, including age of onset of breast and ovarian cancer as well as other malignancies, because the Gail model is not designed for calculating risk in women whose pedigrees suggest autosomal-dominant breast cancer genetic risk. Women with possible genetic risk should be referred for further assessment and consideration of genetic testing. However, women and sometimes even physicians wrongly think that breast cancer genes are only inherited from maternal relatives, so it is necessary for clinicians to specifically inquire about paternal relatives with breast and ovarian cancer<sup>5</sup> and consider the possible limitations of family structure.<sup>6</sup> In addition, a significant prior history of exposure to chest radiation such as for treatment of lymphoma excludes using the Gail model as a starting point and indicates higher risk. Clinicians also must recognize and discuss with their patients that mortality from breast cancer is higher for black women<sup>2</sup> and that women of Ashkenazi Jewish heritage are at higher risk of genetically mediated breast cancer.<sup>4</sup>

Clinicians should specifically discuss the USPSTF recommendations,<sup>1</sup> recognizing that this task force has considered a great deal of medical evidence, but also should discuss that advocacy organizations including the American Cancer Society, Susan G. Komen For the Cure, and the Avon Foundation for Women still favor the recommendation of

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See also pp 162, 164, 168, and 172.

yearly mammography screening starting at age 40 years. While a paucity of literature addresses screening women aged 75 years or older, the overall health and life expectancy of an individual must be considered. Based on these factors each woman can consider with her clinician how she perceives her risk of breast cancer in comparison with the potential harm of screening. Patient autonomy in this decision should be respected.

Clinicians should also consider factors that may mitigate the risk of a false-positive screening result and improve accuracy of mammograms, including referral to an imaging center with radiologists who focus on breast imaging,<sup>7</sup> use of digital mammography in younger women,<sup>8</sup> referral to centers in which breast biopsies can be accomplished by core needle biopsies rather than a surgical approach when feasible, and referral to centers in which timely and coordinated care can be delivered to reduce anxiety. Experience suggests there is a variation in practice in this regard, and in one study, the use of open biopsies was found to be greater in the United States than the United Kingdom.<sup>9</sup> Open biopsies may lead to increased harm with anxiety due to long delays before assessment, as well as potentially unnecessary or more invasive biopsies than medically indicated, particularly for low-suspicion lesions detected by mammography.

The USPSTF also recommended against the utility of clinicians teaching women to perform breast self-examination (BSE).<sup>1</sup> Data from large randomized studies have indicated that this type of formalized BSE may result in more biopsies without reducing risk of death.<sup>10</sup> This issue also was addressed in prior clinical practice guidelines and by advocacy organizations, and enthusiasm for teaching formalized BSE has diminished. However, a practical issue is that many women present to clinicians and are ultimately diagnosed with breast cancer based on self-palpation of a mass. It is crucial in practice that women are not discouraged from bringing these concerns forward to be assessed by a physician.

In the end, support for several important principles is essential. First, while screening mammography should be strongly recommended in 50- to 74-year-olds, women aged 40 to 49 years and those aged 75 years or older should have a personalized assessment and discussion of benefits and risks of mammography. Women at average risk in the age group of 40- to 49-year-olds should be assessed, taking into account that even though mammography screening can reduce risk of death from breast cancer, there are problems with the sensitivity and specificity of the test that are of greater concern in younger women. Primary clinicians should be

aware of community resources and consider that optimal imaging, use of the least invasive clinically indicated mode of biopsy, and timely and coordinated care may mitigate some of the potential harm of a false-positive mammogram. The autonomy of a well-informed patient should guide the ultimate decision without barriers from insurance plans. Rather than a default position of no screening for those at average risk, this approach will likely shift the balance toward screening mammography for women aged 40 to 49 years.

Most importantly, funding agencies for research on breast cancer should emphasize novel and rigorous research to develop sensitive and specific tools for early breast cancer diagnosis and to address the scientifically challenging issue of potential overdiagnosis leading to unnecessary treatment. Women and men who have walked and run miles for this cause would want nothing more than knowing their mothers, daughters, sisters, nieces, granddaughters, and wives will have more effective evidence-based strategies to ensure that breast cancer is no longer a life-threatening disease.

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**Disclaimer:** This Commentary reflects the personal views of the author independent of her institution.

#### REFERENCES

1. US Preventive Services Task Force. Screening for breast cancer: US Preventive Services Task Force recommendation statement. *Ann Intern Med.* 2009;151(10):716-726, W-236.
2. US Cancer Statistics Working Group. United States Cancer Statistics: 1999–2005 cancer incidence and mortality data. <http://www.cdc.gov/uscs>. Accessibility verified December 15, 2009.
3. Nelson HD, Tyne K, Naik A, Bougatsos C, Chan BK, Humphrey L; US Preventive Services Task Force. Screening for breast cancer: an update for the US Preventive Services Task Force. *Ann Intern Med.* 2009;151(10):727-737, W237-742.
4. Qaseem A, Snow V, Sherif K, Aronson M, Weiss KB, Owens DK; Clinical Efficacy Assessment Subcommittee of the American College of Physicians. Screening mammography for women 40 to 49 years of age: a clinical practice guideline from the American College of Physicians. *Ann Intern Med.* 2007;146(7):511-515.
5. Burke W, Culver J, Pinsky L, et al. Genetic assessment of breast cancer risk in primary care practice. *Am J Med Genet A.* 2009;149A(3):349-356.
6. Weitzel JN, Lagos VI, Cullinane CA, et al. Limited family structure and *BRCA* gene mutation status in single cases of breast cancer. *JAMA.* 2007;297(23):2587-2595.
7. Taplin S, Abraham L, Barlow WE, et al. Mammography facility characteristics associated with interpretive accuracy of screening mammography. *J Natl Cancer Inst.* 2008;100(12):876-887.
8. Pisano ED, Gatsonis C, Hendrick E, et al; Digital Mammographic Imaging Screening Trial (DMIST) Investigators Group. Diagnostic performance of digital versus film mammography for breast-cancer screening. *N Engl J Med.* 2005;353(17):1773-1783.
9. Smith-Bindman R, Chu PW, Miglioretti DL, et al. Comparison of screening mammography in the United States and the United Kingdom. *JAMA.* 2003;290(16):2129-2137.
10. Thomas DB, Gao DL, Ray RM, et al. Randomized trial of breast self-examination in Shanghai: final results. *J Natl Cancer Inst.* 2002;94(19):1445-1457.