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The Life and Death of Mammograms in Patients 75 Years and Older—To Screen or Not to Screen?

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## Invited Commentary

## LESS IS MORE

# The Life and Death of Mammograms in Patients 75 Years and Older—To Screen or Not to Screen?

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**Discussions** about stopping breast cancer screening in asymptomatic women 75 years and older are challenging for both physicians and women. Because randomized clinical trials that evaluated screening mammography excluded women in this



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age group, there are no empirical trial data that address whether screening women 75 years and older is beneficial. In this issue of *JAMA Internal Medicine*, Schonberg et al<sup>1</sup> evaluated a decision aid to help older women decide whether to continue screening mammography. Most of the information conveyed in the decision aid studied by Schonberg and colleagues was based on evidence-based extrapolations from simulation modeling and was clearly presented. Women who were randomized to receive the decision aid were more knowledgeable about screening and more likely to discuss mammography with their primary care clinician. Almost all said that they would recommend it to others.

Although guidelines on screening mammography vary domestically and internationally, organizations including the American College of Physicians and initiatives such as the European Breast Guidelines do not recommend screening for women 75 years and older regardless of life expectancy.<sup>2,3</sup> The US Preventive Services Task Force has issued an I statement indicating that insufficient empirical data exist to recommend for or against screening in this older age group.<sup>4</sup> To our knowledge to date, there are no clinical trial data in older women, but it is possible to use simulation modeling to extrapolate trial findings among younger women to older women. Essentially, these models use the findings regarding benefits and risks from clinical trials among younger women and the incidence of breast cancer among older women to estimate the potential effects of screening mammography in the older age group. Simulation models indicate that in women aged 74 years with average health and life expectancy, screening 1000 women would result in about 1 breast cancer death prevented (with the number needed to screen to prevent 1 breast cancer death ranging from 1125 to 1421 women).<sup>5</sup> However, screening 1000 women would also result in 79 to 96 false-positive test results (range across simulation models) and about 1 woman with overdiagnosed cancer (an indolent tumor that, if left untreated, would not have caused symptoms or harm during the woman's lifetime).<sup>5</sup> Screening women who are just a few years older than 74 years results in increased harm and decreased benefit.

An important issue related to mammography in older women is that any benefit from participating in a regular screening program may not occur for many years. Research on the time required for screening to result in benefit sug-

gests that it takes 10 or more years before breast cancer deaths are prevented.<sup>6</sup> In contrast, the potential harm from screening (eg, false-positive test results, unnecessary biopsies and complications from biopsies, potential overdiagnosis and overtreatment) occurs immediately. Furthermore, older women with comorbid conditions may be even more vulnerable than healthy older women to the potential short-term harm from screening. Because about 1 in 3 women in their late 70s have a life expectancy of less than 10 years, it may be more important to focus on imminent health concerns rather than breast cancer screening. In the study by Schonberg et al,<sup>1</sup> there was no significant reduction in mammography screening rates among women with a life expectancy of less than 10 years. Ultimately, the decision aid did not influence this subgroup that, according to many current guidelines, should forgo screening.

In an effort to incorporate life expectancy when determining the risks and benefits of screening mammography in older women, the decision aid presents a colorful scale (after a woman's life expectancy is estimated using a mortality index) with statements ranging from "a mammogram may help you live longer" for women with longer life expectancy to, at the other end, "a mammogram is very unlikely to help you live longer" for women with shorter life expectancy. However, there is no evidence that screening mammography "saves lives," as is suggested in this decision aid. Screening mammography is not associated with a reduction in the overall number of deaths, only breast cancer deaths. If focused on overall mortality, the statement "a mammogram is very unlikely to help you live longer" would be accurate regardless of the woman's life expectancy. More evidence-based statements might be "mammography may reduce your risk of dying of breast cancer" (for women with longer life expectancy) or "mammography is very unlikely to reduce your risk of dying of breast cancer" (for those with shorter life expectancy). These may appear to be small changes in wording, but they may have an important effect on decision making.

Guidelines for prostate, colorectal, and breast cancer screening are increasingly calling for adjustments when a patient's life expectancy is less than 10 years. Unfortunately, physicians have a hard time implementing this recommendation. It is difficult to estimate life expectancy and even harder to convey that screening is unlikely to be beneficial owing to a short life expectancy. We must work to better understand the potential harm and benefit of screening in older persons to ensure optimal communication with patients and families. Many older adults underestimate the harm of cancer screening and overestimate the benefit.<sup>7</sup> Even radiologists who interpret mammograms overestimate the benefit of mammography.<sup>8</sup>

Moreover, women consider screening to be something that should be done automatically or as a moral obligation.<sup>9</sup>

The authors present data suggesting that family and peers influence the decision to be screened; however, variation in payment structures and systems of physician practices might also be factors. Geographic variations in medical care may be notable; for example, Schonberg and colleagues<sup>1</sup> report a more than 3-fold difference between the mammography screening rates of women living in Massachusetts (72%) compared with those in North Carolina (22%). Interestingly, the decision aid led to a modest decrease in screening in Massachusetts (where most women in this study lived) but to a small increase in screening rates in North Carolina. Because the reported screening rate for US women 75 years and older is closer to the North Carolina mean,<sup>10</sup> implementation of this decision aid might lead to an increase in screening rates.

Our communication with patients and the decision aids we use need to work for a broad range of people, since medical information is interpreted through patients' varying perspectives depending on education, literacy, socioeconomic sta-

tus, medical insurance status, peer networks, culture, and other factors. We want our patients to make informed decisions based on facts and to make decisions that fit their personal values. If screening is probably not going to be beneficial to women, we need to let them know. Instead of highlighting impending death within a 10-year window (we admit that it is hard to say, "You probably won't live another 10 years" or "You probably won't live long enough to benefit"), we suggest describing how women with medical comorbidity might experience increased harm from screening (eg, overdiagnosis and overtreatment). We also explain to our patients that the potential benefit might take 10 years or more to accrue, whereas potential harm is immediate. Unfortunately, these simple suggestions will not provide the extra time we need during patient visits to adequately communicate with women and understand their level of knowledge and their personal values. Therefore, research on decision aids such as that by Schonberg et al<sup>1</sup> contributes to an important and beneficial conversation in clinical care and cancer screening.

#### ARTICLE INFORMATION

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**Disclaimer:** Dr Ngo-Metzger is the former scientific director of the US Preventive Services Task Force (USPSTF). This commentary does not necessarily represent the official views and policies of the USPSTF.

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