Commentary

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Annual screening mammography beginning at age 40 saves the most lives

If women wait until age 45 to begin annual screening, then shift to biennial screening at age 55, more than 38,000 women now in their 40s will die unnecessarily

With the recent publication of new American Cancer Society (ACS) guidelines on breast cancer screening,[1] we finally have achieved a consensus. All major organizations, including the US Preventive Services Task Force (USPSTF), agree that the most lives are saved by annual screening beginning at age 40. This is the only science-backed finding of their reviews.

Here is a statement from the USPSTF: "[We] found adequate evidence that mammography screening reduces breast cancer mortality in women ages 40 to 74 years."[2] And from the ACS: "Women should have the opportunity to begin annual screening between the ages of 40 and 44 years."[1]

Regrettably, the USPSTF, whose guidelines determine insurance coverage, endangers women by going on to suggest that they can wait until the age of 50 to begin screening and then wait a full 2 years between screens.

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The new ACS guidelines have been misreported as recommending the initiation of annual screening at age 45, moving to biennial screening at the age of 55. This misunderstanding arose because the ACS describes annual screening starting at age 40 as a "qualified recommendation." However, it defines this qualified recommendation as meaning that "The majority of individuals in this situation would want the suggested course of action, but many would not."[1]

Why would screening guidelines be based on "what many [women] would not" choose? No one forces women at any age to participate in screening. Each woman, regardless of age, should choose for herself whether or not to participate in screening. In fact, the ACS panel provides no data on what screening option women would prefer. Members of the ACS and USPSTF panels, none of whom provides care for women with breast cancer, injected their own personal biases to qualify what the scientific evidence shows by claiming to have "weighed" benefits against "harms." Yet they provide no description of the scale that was used. They state only that there are 2 major harms: "false positives" and "overdiagnosis."

"False positive" is a misnomer

Recalls from screening have been called, pejoratively, "false positives," leading some to believe that women are being told that they have breast cancer when they do not. In reality, most recalled women ultimately are told that there is no reason for concern.

Approximately 10% of US women who undergo screening mammography are recalled—the same percentage as for Pap testing.[3] (The ACS and USPSTF panels ignore the benefit for the 90% of women who are reassured by a negative screen.)

Among the women recalled, more than half are told that everything is fine, based on a few extra pictures or an ultrasound. Approximately 25% (2.5% of those screened) are asked to return in 6 months just to be careful, and approximately 20% (2% of women screened) will be advised to undergo imaging-guided needle biopsy using local anesthesia. Among these women, 20% to 40% will be found to have cancer.[4]

This figure is much higher than in the past, when women had "lumps" surgically removed, only 15% of which were cancer. Most of these lesions were larger and less likely to be cured than screen-detected cancers.[5]

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Panels fail to justify breast cancer deaths that would occur with proposed screening intervals

The main reason the ACS and USPSTF panels decided to compromise on their recommendations was to try to reduce the number of recalls, yet they never explain how many fewer recalls are equivalent to allowing a death that could have been avoided by annual screening starting at age 40.

The National Cancer Institute's Cancer Intervention and Surveillance Modeling Network (CISNET)—used by both panels—shows that, if women in their 40s wait until age 50 and then are screened every 2 years (as the USPSTF recommends), as many as 100,000 lives will be lost that could have been saved by annual screening starting at age 40.[6] If women wait until age 45 to begin annual screening and then shift to biennial screening at age 55 (as the ACS recommends), more than 38,000 women now in their 40s will die, unnecessarily, as a result.[7]

Neither panel states how many recalls avoided are equivalent to allowing so many avoidable, premature deaths.

No invasive cancers resolve spontaneously

The other alleged harm of screening is "overdiagnosis"—the exaggerated suggestion that mammography screening finds tens of thousands of breast cancers each year that, if left undetected, would disappear on their own.[8,9] Such analyses have been shown to be scientifically unsupportable.[10–13] In fact, no one has ever seen an invasive breast cancer disappear on its own without therapy. The claim is tens of thousands each year, yet no one has seen a single case.

There certainly are legitimate questions about the need to treat all cases of ductal carcinoma in situ (DCIS). However, if an invasive breast cancer is found during screening and then left alone, it will grow to become a palpable cancer, with lethal capability.

Here are the proven facts about breast cancer screening

- **The most lives are saved when annual screening begins at age 40.** This fact has been proven by randomized, controlled trials.[14,15] All of the data models in CISNET agree that the most lives are saved by annual screening beginning at age 40.[16]
- **There is no scientific or biological reason to use the age of 50 as a threshold for screening.** None of the parameters of screening changes abruptly at age 50—or any other age.[17]
- **More than 30,000 new cases of breast cancer occur each year among women in their 40s.**[18]
- **More than 40% of years of life lost to breast cancer are among women diagnosed in their 40s.**[19] The ACS found that the years of life lost to breast cancer for women aged 40 to 44 are the same as for women aged 55 to 59.[2]
- Despite access to modern therapies, numerous observational studies show that **when screening is introduced into the population, the breast cancer death rate goes down,** in relation to participation in screening, for women aged 40 and older.[20–35]
- In the 2 largest Harvard teaching hospitals, **more than 70% of women who died from breast cancer were among the 20% who were not participating in screening**, including women in their 40s, despite the fact that all had access to modern therapies.[36] It is likely that many of the 40,000 women who still die in the United States each year, despite improvements in therapy, were also not participating in screening.
- **The death rate from breast cancer remained unchanged from 1940 until screening began in the mid-1980s.** Soon after, in 1990, the rate began to fall for the first time in 50 years. Today, 36% fewer women die each year from breast cancer.[37] Men with breast cancer have access to the same therapies but, in 1990, the death rate for men began to increase as it began to fall for women. The death rate for men remained elevated until 2005 and then returned to 1990 levels, where it has remained, as the death rate for women has continued to decline.[38] Women are being screened, whereas men present with larger and later-stage cancers. Therapy has improved, but the most lives are saved when breast cancer is treated early.

Why not screen only high-risk women?

It has been suggested that only high-risk women should participate in screening. However, women who inherit a genetic predisposition account for only about 10% of breast cancers each year.[39] If we add to that number other women with family histories or other known risk factors, these cases account for another 15% of cancers.[40]

Regrettably, high-risk women account for only a quarter of breast cancers diagnosed each year. If only high-risk women are screened, the vast majority of women who develop breast cancer (75%) will not benefit from early detection.

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The bottom line

Mammography is not perfect. It does not find all cancers and does not find all cancers early enough for a cure. However, there is no universal cure on the horizon, while screening is available today and is saving thousands of lives each year.

All women should have access to, and be encouraged to participate in, annual screening starting at age 40.

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