

Saving Lives: Mammograms, Breast Cancer, and Health Insurance Reform

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The vigorous controversy about the recent recommendation of the US Preventive Services Task Force (USPSTF) [1] against routine screening mammography for healthy, low-risk women aged 40 to 50 years has demonstrated our broad national consensus about the value of preventive medicine in general and breast cancer screening specifically. Nonetheless, many of the recent dissenting commentaries on this issue from concerned professionals [2], professional organizations [3], patients and their loved ones, and politicians have been narrowly focused and have tended to overlook important considerations. It is important to review this whole issue in the context of the actual use efficacy and consequences of screening mammography and its impact on breast cancer mortality.

In its new report, the USPSTF [1] recognized that “the risk for breast cancer increases with age. The 10-year risk for breast cancer is 1 in 69 for a woman at age 40 years, 1 in 42 at age 50 years, and 1 in 29 at age 60 years” (p 720). Its recommendation concerns “routine screening,” not mammography done for high-risk patients such as those who have breast masses, strong family histories, or abnormal genes or who may request screening. The USPSTF updated its 2002 recommendations based on published data from a meta-analysis of randomized, controlled clinical trials that estimated the “number needed to invite for screening [for 10 years] to extend one woman’s life [prevent 1 death]’ as 1904 for

women aged 40 to 49 years and 1339 for women aged 50 to 59 years” (p 719). For women aged 60 to 69 years, the number needed to invite is only 337, a markedly more focused risk assessment strategy.

The USPSTF [1] recognized two important significant potential harms of screening mammography in younger women: first, false-positive results, which “can cause anxiety and lead to additional imaging studies and invasive procedures (such as biopsy or fine-needle aspiration). False-positive results . . . are more common in younger women” (p 721). Younger women are still menstruating and have denser breasts, which are harder to evaluate on mammography. Also, it is clearly necessary for every radiologist to read mammograms very conservatively and tend toward overcalling what they see so as not to miss a subtly abnormal truly positive finding. It would be inappropriate to try to eliminate false-positives. According to one of many studies of the issue [4], each mammogram has a 6% to 10% chance of a false-positive result. In that study, the cumulative risk for a false-positive result after 10 mammograms was 56.2% for women aged 40 to 49 years at the time of the tests, compared with 47.3% for women aged 50 to 79 years. Furthermore, diagnostic workups after false-positives resulted in additional costs of 30% of the total costs for the initial screenings. In addition, for any medical test, the chance of a positive finding being truly positive is strongly dependent on the actual

frequency of occurrence of the studied condition in the population tested. In statistics, this is known as Bayes’ rule. Its impact is especially important for screening tests, rather than diagnostic tests, because in screening, the true frequency of occurrence is low. Bayes’ rule clearly predicts that as the true frequency of a condition falls, even if the test is technically very good and valid, the number of false-positives rises and can quickly exceed the number of true-positives. Second, radiation exposure from mammography may increase the risk for breast cancer. A recent Dutch meta-analysis [5] presented in November 2009 (after the USPSTF report) on the experiences of 9,420 women with high-risk breast cancer genes, many of whom started undergoing mammography in their 20s, found that their risk for breast cancer was 2.5 times higher by a mean age of 45 years among those who had ≥ 5 mammograms than their counterparts who chose not to undergo mammography. Thus, considering the natural course of the disease in the total population of women, the effectiveness of mammographic screening, and the possible harms, the USPSTF [1] recommended “against routine screening mammography in women aged 40 to 49 years” (p 716).

The USPSTF (but this was not its task), its critics, and most of the public discussion about this issue have not considered the broader context of mammographic screening and breast cancer mortality. The deadly impact of the lack of

health insurance has been completely overlooked. Uninsured women are much more likely to be diagnosed with advanced-stage breast cancer than their insured peers. As reported by the American Cancer Society [6], in 2005, whereas 75% of women aged 18 to 64 years with private insurance had undergone mammography in the past 2 years, only 33% of women uninsured for >12 months had undergone the test. Just 8% of insured women aged 18 to 64 years of all ethnic groups had stage III or IV (advanced or metastasized) breast cancer at diagnosis, compared with 18% of uninsured women. All breast cancer patients with private insurance had a 5-year survival rate of 89%, compared with only 77% in those who were uninsured. The lack of insurance coverage increases the likelihood that breast cancer will go undetected and, when found, be less responsive to treatment. The Institute of Medicine [7] put it another way: women without health insurance have a 30% to 50% higher risk for dying from breast cancer than women with private insurance. There will be much more benefit and less suffering if we can allocate our limited resources to providing full health insurance, including mammography, to all women on an evidence-based basis rather than focusing resources on continuing to provide screening mammography to a relatively low-risk group.

The importance of this perspective is both reinforced and highlighted by a series of studies that compared actual cancer survival in the United States (in Des Moines, Iowa) and Canada (in Winnipeg, Manitoba) [8,9]. From 1984 through 1997, "socioeconomic status and breast cancer survival were directly associated in the US cohort, but not in the Canadian co-

hort," with statistically significant 14% better survival in Winnipeg, even among aboriginal people. The study compared residents of the lowest income areas in each city, presumably a proxy for poverty in both cities and lack of insurance only in the United States. It should be noted that during these years, 94% of Des Moines residents were classified as white, whereas <66% of Winnipeg's were so classified. The authors noted that similar medical outcome differences exist in other American cities studied and for other cancers and are largest for patients aged <65 years. As they noted, this "seems to point compellingly toward the different health care systems in Canada and the United States as its most cogent explanation."

Furthermore, the American Cancer Society, along with the Kaiser Family Foundation [10], documented 20 representative cases of cancer patients (7 with breast cancer) who were fully insured and called the American Cancer Society because they had to limit or give up treatment or even declare bankruptcy because of insurance policy copayments, deductibles, or policy limits. In fact, a recent study [11] showed that 62.1% of all personal bankruptcies were the result of illness or medical expenses. Imagine the predicament of a woman who is uninsured and who discovers a breast cancer through screening mammography or a self-examination. It is often very difficult for her to find safety-net providers to provide expeditious, quality, coordinated, appropriate treatment. There are even cases of women forgoing the opportunity of undergoing screening mammography for fear that something will be found, making them uninsurable when they get their next jobs.

The details of the controversy surrounding screening mammography and breast cancer mortality serve to highlight the importance of having a broad and comprehensive perspective on specific health care issues. We are all coming to grips with the realization that we must face illness and disease with limited resources. It is best that we devote our energies and resources to getting the most for our health care dollar. We must pay attention to the recommendations of evidence-based medicine, and the necessity for universal national health insurance could not be more clearly demonstrated.

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