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Benefit of Breast Cancer Screening More Consistent Across Studies Than Previously Understood

SAN ANTONIO — Re-examination of data from four large studies of the benefits and harms of mammography screening shows that the benefits are more consistent across these studies than previously understood and that all the studies indicate a substantial reduction in breast cancer mortality with screening, according to results presented here at the [2013 San Antonio Breast Cancer Symposium](#), held Dec. 10–14.

There is widespread debate in academic literature and the media about the absolute benefit of mammography screening, commonly defined as the number of women who must be screened to prevent one breast cancer death. Four major reviews of screening and mortality each paint a different picture, with estimates of the number of women who must be screened ranging from 111 to 2,000, an almost twentyfold difference.

“We wanted to understand why these estimates differ so much,” said Robert A. Smith, Ph.D., senior director of cancer screening at the American Cancer Society in Atlanta. “What we found was that the estimates are all based on different situations, with different age groups being screened, different screening and follow-up periods, and differences in whether they refer to the number of women invited for screening or the number of women actually screened. When we standardized all the estimates to a common scenario—i.e., the same exposure to screening, and a similar target population, period of screening, and duration of follow-up—the magnitude of the difference between studies dropped from twentyfold to about fourfold.”

“The debate about the value of mammography screening is not likely to fade away, and there are real, reasonable differences of opinion about various aspects of screening,” Smith continued. “However, we hope these findings reassure clinicians and the public that that there is little question about the effectiveness of mammography screening, which should continue to play a very important role in our efforts to prevent deaths from breast cancer.”

The four reviews compared by Smith and colleagues were the Nordic Cochrane review, the U.K. Independent Breast Screening Review, the U.S. Preventive Services Task Force (USPSTF) review, and the European Screening Network (EUROSCREEN) review. The researchers chose to apply the data from each of the reviews to the scenario used in the U.K. Independent Breast

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Screening Review. This review investigated the effect of screening women in the United Kingdom for 20 years, from age 50-69, on breast cancer mortality from age 55-79, and estimated that 180 women needed to be screened to prevent one breast cancer death.

After standardizing the Nordic Cochrane, USPSTF, and EUROSCREEN reviews to the scenario in the U.K. Independent Breast Screening Review, the magnitude of the difference between studies in the estimated number of women needed to be screened to prevent one breast cancer death dropped dramatically. The adjusted estimates ranged from 64 to 257 instead of the original 111 to 2,000. Specifically, the Nordic Cochrane review estimate for the number of women who must be screened to prevent one breast cancer death dropped from 2,000 to 257. The USPSTF estimate dropped from 1,339 for women age 50-59 and 337 for women age 60-69, to 193 for women age 50-69. The EUROSCREEN estimate dropped from 111 to 64.

Additional details about this study are available in the November 2013 issue of [*Breast Cancer Management*](#). This study team was led by Stephen W. Duffy, M.Sc., professor of cancer screening at Queen Mary University of London, and was funded by the Centre for Cancer Prevention, Wolfson Institute of Preventive Medicine, Barts and The London School of Medicine and Dentistry, Queen Mary University of London, United Kingdom. Smith declares no conflicts of interest.