

Mammography screening shows limited effect on breast cancer mortality in Sweden

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Breast cancer mortality statistics in Sweden are consistent with studies that have reported that screening has limited or no impact on breast cancer mortality among women aged 40-69, according to a study published July 17 in the *Journal of The National Cancer Institute*.

Since 1974, Swedish women aged 40-69 have increasingly been offered mammography [screening](#), with nationwide coverage peaking in 1997. Researchers set out to determine if mortality trends would be reflected accordingly.

In order to determine this, Philippe Autier, M.D., of the International Prevention Research Institute (iPRI) in France and colleagues, looked at data from the Swedish Board of Health and [Welfare](#) from 1960-2009 to analyze trends in breast cancer mortality in women aged age 40 and older by the county in which they lived. The researchers compared actual mortality trends with the theoretical outcomes using models in which screening would result in mortality reductions of 10%, 20%, and 30%.

The researchers expected that screening would be associated with a gradual reduction in mortality, especially because Swedish mammography trials and [observational studies](#) have suggested that mammography leads to a reduction in breast cancer mortality. In this study, however, they found that breast [cancer mortality rates](#) in Swedish women started to decrease in 1972, before the introduction of mammography, and have continued to decline at a rate similar to that in the prescreening period. "It seems paradoxical that the downward trends

in breast cancer mortality in Sweden have evolved practically as if screening had never existed," they write. "Swedish breast cancer [mortality statistics](#) are consistent with studies that show limited or no impact of screening on mortality from breast cancer."

The researchers do note certain limitations of their study—namely, that it was observational, so unable to take into account the potential influence of other breast cancer risk factors such as obesity, which may have masked the effect of screening on mortality. They also write that population mobility may have biased the results.

In an accompanying editorial, Nereo Segnan, M.D., MSc Epi, CPO Piemonte, of the Unit of Cancer Epidemiology at ASO S Giovanni Battista University Hospital in Italy and colleagues write that, in the assessment the efficacy of the introduction of screening, the paradox is that descriptive analyses of time trends of breast [cancer mortality](#) rates are used to confute the results of incidence based mortality studies, employing individual data and conceived for overcoming some of their limitations, or of randomized trials.

The conclusion by Autier et al that the 37% decline in [breast cancer mortality](#) in Sweden was not associated with breast cancer screening seems therefore difficult to justify and partially unsupported by data (two groups of Swedish Counties do show a mortality decrease that, according to the stated criteria, could be linked to screening).

They also feel that "it is time to move beyond an apparently never-ending debate on at what extent screening for breast cancer in itself conducted in the seventies through the nineties of the last century has reduced mortality for breast cancer, as if it was isolated from the rest of health care The presence of an organized screening program may have promoted the provision of more effective care by monitoring the treatment quality of screen-detected cancers and by favoring the creation

of multidisciplinary units of breast cancer specialists".

In another accompanying editorial, Michael W. Vannier, M.D. of the Department of Radiology at the University of Chicago Medical Center, feels that it's hard to see mortality reduction as a screening benefit because outliers such as the natural history of the disease, along with the frequency of screening as well as the duration of follow up may misrepresent the time patterns in the mortality reductions. "We know that isolating screening as an evaluable entity using death records fails to reveal major benefits," he writes, adding that even if screening were 100% effective, the number of deaths may remain unchanged. Still he feels that without a better alternative, mammography screening will continue to be used. "As our tools improve, we can begin to fully realize the promise of [breast cancer](#) screening to arrest this dread disease at its earliest stage with the least morbidity and cost."

Provided by Journal of the National Cancer Institute

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