

Routine Mammograms Lead to Overdiagnosis of Breast Cancer

By [Katherine Harmon](#) | April 2, 2012 |

Breast cancer kills nearly 40,000 women in the U.S. each year—a figure that has been in [slow decline in the past two decades](#), despite (and in part thanks to) improved screening technology and an increase in treatment options. The percentage of women who get breast cancer and survive, however, is a [trickier statistic](#) to assess.

As the number of women screened [via mammograms](#) has grown, more cases of breast cancer have been detected—and found earlier than in the past. With these additional screenings, the number of breast cancer deaths has also decreased. Some health advocates argue that this growing survivor rate is thanks, in large part, to the ability to start treatment sooner for women whose breast cancer is caught earlier.

Other experts say that the growing “survivor” rate is misleading because screening identifies many cases that never would have become fatal—or possibly even noticeable.

Such instances are known as overdiagnosis—and they occur in some 15 to 25 percent of breast-cancer cases detected by routine mammograms, according to a new study published online April 2 in *Annals of Internal Medicine*. ([Prostate cancer](#) is another commonly “overdiagnosed” condition, as many men over the age of 60 will get prostate cancer, but even without treatment, it will not be fatal for the vast majority of them.)

Patients, and some healthcare providers, often note that they would rather be safe than sorry when it comes to cancer screening. But mis- or overdiagnosis of breast cancer can mean needless painful biopsies, harsh treatment and considerable stress.

“Unfortunately, mammography screening programs cannot distinguish between fatal and harmless breast cancers,” Joann Elmore, of Washington School of Medicine in Seattle, and her colleagues wrote in an essay published online in the same issue of *Annals of Internal Medicine*.

For the study, led by Mette Kalager, of the Harvard School of Public Health, the researchers analyzed health records of 39,888 women who had been diagnosed with invasive breast cancer between 1986 and 2005. The women all lived in Norway, where a nationwide mammography program was rolled out, region-by-region, between 1996 and 2005. This program provides a rare study population of women who likely have similar risk factors but who generally did not receive routine mammograms until their area joined the program. Women ages 50 to 69 were invited to get a mammogram every two years, and more than three quarters of the target population complied.

What does that overdiagnosis rate mean for one of these Norwegian women who is trying to decide whether or not to get a mammogram? If that woman does get a breast cancer diagnosis, there is about a one-in-four to one-in-six-and-a-half chance of that cancer not being serious enough to have eventually killed them or even caused symptoms.

In the first decade of the Norwegian Breast Cancer Screening Program, it likely prevented 47 women from dying from breast cancer, Kalager and her colleagues found. It also meant that hundreds (and possibly more than 1,000), of women were overdiagnosed, resulting in additional unnecessary procedures, stress and costs.

“Overdiagnosis creates a substantial ethical dilemma and burdens the patient and the health care system.” Women must balance whether they are willing to endure the stress and cost risk of having a more benign or slow-growing tumor detected early against the odds of finding a more aggressive growth. These odds were averaged out over the general population, so individual women have higher or lower chances of getting a more aggressive form of breast cancer. And based on family history, some women may be advised to get mammograms early and often.

And with limited resources, healthcare systems have to ask whether they are doing more good for more people by spending time and money on more screening or on providing more care for the already ill.

The rates of breast cancer overdiagnosis in the U.S. are likely higher than they are in the Norwegian sample, Elmore and her co-authors wrote in their essay. [Until 2009](#), the U.S. Preventive Services Task Force Many recommended women begin biannual mammograms starting at the age of 40, which had provided an extra decade and a population of lower risk women in which overdiagnoses could occur. (The Task Force currently recommends screening every two years for women ages 50 to 74 years and that earlier screening should be undertaken only on a case-by-case basis.) Additionally, many radiologists in the U.S. are hesitant to skip over a slight indication of abnormality for fear of a malpractice lawsuit if they fail to recommend follow up for a lesion that later turns out to be malignant, Elmore and colleagues noted.

“Overdiagnosis need not imply that a given screening effort is ineffective or ill-advised,” they wrote in the *Annals* essay. “Better tools are needed to reliably identify which breast cancer will be fatal without treatment and which can be safely observed over time without intervention.”



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