Earlier this year, The Times of London published a letter reprimanding the UK’s National Health Service (NHS) for not providing women with adequate information about the risks of screening mammography.

Signed by nearly two dozen physicians, researchers, and patient advocates, the letter described “the harms associated with early detection of breast cancer by screening that are not widely acknowledged.” The most important of these harms are overdiagnosis—detecting cancers that would not have been diagnosed during the patient’s lifetime without screening—and its frequent consequence, overtreatment.

According to the authors of the letter, many breast cancers detected by screening, perhaps as many as half, would never cause women any harm during their lifetime if the tumors were left untreated. But because these nonlethal cancers are detected by screening mammography, the women are labeled cancer patients and face the risks associated with surgery, radiation, and chemotherapy.

The letter was a striking indication of growing acceptance in the cancer community that early detection is not always beneficial, and it pointed to the rising number of experts in Europe and the U.S. calling for an open discussion of the risks and benefits of screening.

The immediate problem, the letter writers said, is that women in the UK are not being properly informed of the potential harms of screening. The information pamphlet sent to women when they are invited to be screened does not mention the possibility of overdiagnosis or overtreatment. “As a result, women are being manipulated, albeit unintentionally, into attending,” the letter reads. “We believe that women should be clearly informed of these harms in order to make their own choice about whether to attend for screening.”

Writing in the British Medical Journal, Peter Gotzsche, M.D., Dr.Med.Sci., director of the Nordic Cochrane Center in Copenhagen, and colleagues singled out the NHS and its breast cancer screening pamphlet as an example. The researchers critiqued the current pamphlet, noting that it emphasizes the benefits of mammography—an estimated 1,400 lives saved each year in the UK, for example—but it ignores what the authors consider the most serious harms—unnecessary treatment and false positives.

Although Gøtzsche does not think that screening should be abandoned altogether, his recent work has been aimed at illuminating what he sees as biased information about breast cancer screening. “The only thing we...
want in our research is to provide as honest information as possible to the public because we feel that those who are responsible [for screening] are not doing that,” he said. “It is a scandal that the information that has been given to women so far has been so one-sided and often directly wrong.”

To give women a more accurate picture of the benefits and harms of breast cancer screening, Gotzsche and his colleagues have created their own information pamphlet that tells women, “It may be reasonable to attend for breast cancer screening with mammography, but it may also be reasonable not to attend, as screening has both benefits and harms.” The researchers also include their estimates on the extent of overdiagnosis of breast cancer. They determined that if 2,000 women are screened for 10 years, one woman will benefit by not dying of breast cancer, but 10 healthy women will be harmed when they are unnecessarily treated for a cancer that never would have progressed. Also, 200 healthy women would have a false alarm.

The NHS screening program has refuted these figures, pointing out that Gotzsche’s numbers are not based on the UK population. Looking at UK data, an independent subcommittee of the NHS’s Advisory Committee on Breast Cancer Screening estimated that for every 1,000 women screened over 10 years, there would be 2.8 fewer breast cancer–related deaths in screened than in unscreened women (5.2 versus 8.0 deaths per 1,000) and there would be four extra breast cancers diagnosed (30 versus 26 cancers diagnosed per 1,000). “Thus, for every death prevented, about one to two extra breast cancers would be diagnosed, far lower than Gotzsche predicts,” according to a statement from the NHS cancer screening office.

**Defending the Message**

The NHS has defended its pamphlet because it is based on a rigorous review of the current screening literature. In January, they began updating the pamphlet, which should be completed by the end of the year.

“The NHS Breast Screening Programme is committed to helping women make informed choices about their breast screening invitation,” said Julietta Patrick, director of the program. “Part of this is helping them assess the risks and the benefits of screening for breast cancer. The Breast Screening—The Facts leaflet gives details on these risks and benefits and also provides links to further materials on our Web site.”

To some extent, the disagreement over the degree to which overdiagnosis exists has fueled the screening debate. The estimates range from about 10% to 30%, according to the U.S. National Cancer Institute’s PDQ database. But Gotzsche suspects that it could be as high as 50% on the basis of new estimates in a report currently in press.

Others say that the exact figure may not matter as much as candidness about the potential for harm. “The general attitude of many health care professionals and policy makers is that women should have screening and that they should be ‘encouraged’ to attend,” said Paul Pharoah, M.D., Ph.D., a signer of the Times letter. “The aim of the [NHS breast screening program] is that 100% of eligible women attend. I think this culture needs to change,” said Pharoah, a senior clinical research fellow in the department of oncology at the University of Cambridge.

Rather than aiming for the screening of all women aged between 50 and 70 years, Pharoah said, a more appropriate goal would be to make sure that all women are accurately informed about screening so that they can decide for themselves. “The ‘invitation’ to the [breast cancer screening program] is not an invitation at all; it is a summons,” he said. “If women decide that screening is not for them, that is OK, and they should not be made to feel they are letting womankind down by making that choice, as many nonattenders feel now.”

The idea that early cancer detection saves lives has become so well accepted that mammography is now a commonly used measure of health care quality—both in the UK and in the U.S., said Steve Woloshin, M.D., another letter signatory and associate professor of medicine at Dartmouth Medical School, Hanover, N.H. “For a long time, the public has been bombarded with messages persuading them that screening is the ‘right thing to do.’ They have all repeatedly heard that ‘earlier is better’—a message that makes intuitive sense,” he said. And the cycle is reinforced: When more women are screened, more women are diagnosed with breast cancer.

The problem, of course, is that there is currently no way to know which cancers will progress and which will not. “There is no question that we overdiagnose some cancers, but the question is how many and which ones are they,” said Karla Kerlikowske, M.D., professor of medicine, epidemiology, and biostatistics at the University of California, San Francisco.

Until better screening tests are developed, many breast cancer experts accept that for most women, particularly those aged between 50 and 69 years, the benefits of screening outweigh the harms. Therese Bevers, M.D., medical director of the Cancer Prevention Center at the University of Texas M. D. Anderson Cancer Center in Houston, said she believes that because of screening, breast cancer mortality is falling.

“Overdiagnosis is a separate problem, but it may be a better problem to have than later-stage cancers,” Bevers said. The key is to find tools that will allow physicians to determine which cancers will progress and which will not, she added. Biomarker studies under way could someday produce such a tool.

Alternatively, improving treatments to a point where breast cancer can be effectively treated at any stage could perhaps make the entire screening debate a moot point, Kerlikowske said. “If treatment gets good enough, screening won’t add much, no matter what the screening test,” she said. “That is a possibility, a wonderful possibility.”