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Finding More Cancer Isn't the Answer

By H. Gilbert Welch, Lisa Schwartz and Steven Woloshin
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The cancer diagnosed in Elizabeth Edwards and Tony Snow last month was metastatic, the form of the disease that is most dreaded because it has spread to distant organs -- and it kills. Some have seen this news as evidence that we need to look harder to find cancer earlier -- before it spreads. And also last month we learned a way to do just that for breast cancer: magnetic resonance imaging.

Should MRI become the standard screening test for breast cancer?

The only argument against this idea seems to involve money. MRIs do cost a lot of money -- somewhere around $1,000 each. Not surprisingly, many insurers don't want to pay. So the big battle seems destined to be about who will. You will soon hear advocates talking about legislation to ensure payment and accusing those who do not want to pay for the test of denying access to lifesaving services simply to save money.

This is wrong. Cost is an issue only if benefit has been proved. In the case of MRI, we don't know whether a benefit exists. You can't assume that expensive new technologies are better. The focus on cost distracts from the real question: Does the test help?

You might think that the New England Journal of Medicine answered this question when it reported in the March 29 issue that MRI finds breast cancers that mammograms miss.

But the best test isn't necessarily the one that finds the most cancer. It turns out it is easy to find more and more cancer. Just get more tests. The harder we look, the more we find.

In an earlier NEJM study, women were given two mammograms on the same day: One used standard X-ray films, the other used new digital technology; digital mammograms found more cancers.

But if you look at the numbers carefully, you'll find another story. Of the 237 breast cancers found by screening, 51 percent were detected by *both* tests, and 27 percent by digital exam alone. But the remaining 22 percent were detected only by the standard mammogram! So if the goal is simply find more cancer, you'd want to have both tests.

There is reason to wonder whether this finding has less to do with the difference between the two tests and more with just having two tests. Given what we know about how different radiologists can look at the same mammogram and see different things, all you need to do is have your standard mammogram read by two radiologists rather than one, and you will find yet more cancer.

And if you really want to find as much cancer as possible, we would suggest whole-body CT, MRI and PET scans every month. But that would be absurd. Why? Because the goal is not to find more cancer. The goal is to save lives. The two goals are not the same.

The problem is that cancers detected early may not be the ones that kill. It turns out there is a spectrum of cancers. Some rapidly kill, some progress more slowly and some do not progress at all (and may even regress). That is why some doctors recommend watchful waiting for men with early prostate cancer -- because most men diagnosed with the disease will not die from it.

Cancer epidemiologists have a name for the detection of cancer in people who would otherwise never develop symptoms (or die) from the cancer. They call it over-diagnosis. Over-diagnosis is the reason that the number of people with cancer diagnoses is increasing much more quickly than the numbers dying from those cancers. This phenomenon is now recognized as occurring not only in prostate cancer but also in breast cancer, thyroid cancer and melanoma.

The problem with over-diagnosis is that it leads to over-treatment. Unfortunately, at the time of diagnosis, we cannot tell who has non-progressive cancer. So we tend to treat everybody -- and that's the real problem. Treatment can only harm people whose cancer is non-progressive -- a disease that was never going to bother them.

All our cancer treatments have harms. Disfiguring surgery and the nausea, fatigue and hair loss associated with chemotherapy have real quality-of-life consequences for patients. And simply having the diagnosis of cancer can be terrifying.

Doctors and the public need to understand that finding more cancer is not the answer. You want to know whether a test saves lives or reduces the number of people with metastatic cancer. And you want to know about the downsides: how many people suffer needlessly in the process.

The best test needs to do three things. It needs to find the right cancers -- the ones that kill people. It should not find the wrong cancers -- the ones that never bother people. And it should not cause a lot of false alarms. In fact, the best test is almost certainly not the one that finds the most cancer. That one almost surely will lead to the most over-diagnosis and the most false alarms.

For breast cancer, MRI may (or may not) be the best test. We just don't know. The only way to know is to do a true experiment -- a randomized trial -- in which half the participants have MRI while half have mammograms, and determine how many die from breast cancer in each group. These experiments are a lot of work and they take a lot of time. But they are the only way out of what is beginning to appear to be a vicious cycle: more and more testing finding more and more cancer, with the assumption of benefit. Now is the time to study this breast cancer test the right way, before it is prematurely adopted. To encourage this, perhaps MRI should be covered only for participants in a randomized trial.

The time has come for a more balanced view of early detection. The prevailing view is that more diagnoses can only help. The reality is much more nuanced: Some people may be helped, while others will almost certainly be harmed. Early detection is a strategy that turns many more people into patients. Its effect on how many people die is relatively small, at best. People will die from cancer, whether or not they are tested.

So while it's tempting to think that had Elizabeth Edwards had mammograms before she felt her lump in 2004, she would not have metastatic cancer now, that's wishful thinking. Given what we know from the

randomized trials of mammography, it is likely that she would be in the same situation now even if she had had regular mammography. Unfortunately, people who do everything right -- that is, get routinely screened -- still get bad cancer. Just ask Tony Snow, who was reportedly screened several times a year. ·

H. Gilbert Welch, Lisa Schwartz and Steven Woloshin are physician researchers at the VA Outcomes Group and faculty members at Dartmouth Medical School. Welch is the author of "Should I Be Tested for Cancer? Maybe Not and Here's Why." The views expressed here are their own. Comments:health@washpost.com.