

## COMMENTARY

### Why We'll Never Cure Cancer

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Recently the National Cancer Institute, the Centers for Disease Control and Prevention, and the American Cancer Society trumpeted a 2% annual decline in cancer mortality rates as proof that the progress we are making in cancer research is benefiting patients. I think they're celebrating the glass being 1/50th full.

To be sure, scientists have made tremendous scientific advances in prevention, early detection and management of cancer. But these organizations should decry the inability of the health-care system to deliver these advances to the patients who need them. The gaps are glaring:

- Prevention. In colon cancer, the No. 2 cancer killer, better understanding of the natural history of cancer has led to the development and validation of colonoscopy screening. The Centers for Disease Control and Prevention estimates that adequate utilization of colonoscopy alone could reduce the colon cancer death rate by 50%.

According to the government's Agency for Healthcare Research and Quality, however, only four in 10 people who should be screened have ever gotten a colonoscopy or similar test to look for precancerous polyps -- in part because doctors forget to recommend the test to patients who should have it.

Even for those who do get colonoscopies, the quality is uneven. Not all colonoscopists (doctors who perform colonoscopies) are good at finding the precancerous polyps in the colon. In a study published this year in the American Journal of Gastroenterology, researchers reported that the most skilled colonoscopists found pre-cancerous growths in 40% of the patients they tested, but the least-skilled found polyps in only 15% of those screened. When it came to the most concerning types of polyps, the most skilled doctors found more than three times as many of them. The authors concluded that the most important predictor of whether a patient actually benefits from having a colonoscopy is the ability of the doctor who does the test.

- Early treatment. Consider prostate cancer, the No. 2 cancer killer of men in the United States. Randomized studies show that men with early prostate cancer live longer if they have surgery. New techniques and technologies have led both to steady reductions in complications and substantial improvements in cancer control. Here again, this progress is not reaching all patients.

Five years ago, my colleagues and I published a study in the New England Journal of Medicine showing that only very experienced surgeons actually achieve the low complication rates that all patients deserve. This summer, a study in the Journal of the National Cancer Institute showed that experienced

surgeons who have done 250 or more prostate surgeries are also very good at achieving cancer control - almost twice as good as those surgeons who have performed relatively few operations in their career (around 10 or so).

If inexperienced surgeons were the exception, this would not be a big problem, as most prostate cancer patients would be getting the best medicine had to offer. But this is not the case. In New York State in 2002, the average prostate surgeon performed fewer than four operations, and there were 114 surgeons who did only one prostate operation. In other words, even though expertise is needed to deliver an important treatment that should have low complications and high success rates, there is nothing that ensures that men with prostate cancer can have access to such expertise.

- Personalized, targeted treatments. In breast cancer, the No. 2 cancer killer of women, Genentech's Herceptin drug is emblematic of the progress that has been made towards personalizing treatment. For women with a specific abnormality in their cancer, Herceptin can double the cure rate by "targeting" a specific protein that was discovered to play a key role in cancer cell proliferation.

Figuring out which women should get Herceptin is the key to personalizing this treatment, yet this is not being done as well as it should. At the American Society for Clinical Oncology conference meeting this year, we learned that about 10% of the time tumors that are reported to be positive, and thus should respond to Herceptin treatment, are in fact negative. There was another study suggesting that 20% of the tumors that the tests say are negative may actually still respond to Herceptin. So one of the most important advances in personalized breast-cancer treatment may be going to women it shouldn't, and not going to women it should.

- Pain management. Scientific advances in this field are critical for many patients with advanced cancer, including more than 100,000 patients who die each year of lung cancer, the No. 1 cancer killer of both men and women. Every year, longer acting, easier-to-take pain medications with more favorable side effect profiles are approved and come on the market. Yet, a study in the New England Journal of Medicine in 2000 reported that in our system, pharmacies don't actually stock many of the medications doctors prescribe for cancer pain. The shortfalls are most profound in poor and black communities where lung cancer is also more prevalent. Three quarters of pharmacies in poor neighborhoods do not have adequate supplies of cancer pain medications.

In the interviews surrounding the announcement about cancer death rates, most observers argued that more spending on research was urgently needed, to build on the scientific advances that have been made. That's right. We should also be spending more, much more, to ensure that scientific advances benefit patients.