



Cancer Screening Campaigns — Getting Past Uninformative Persuasion

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For nearly a century, public health organizations, professional associations, patient advocacy groups, academics, and clinicians largely viewed cancer screening as a simple, safe way to save lives.¹

Public health messages and campaigns reflected and amplified this view, aiming to maximize the population's uptake of screening. One obvious approach was to use powerful tools of persuasion — including fear, guilt, and a sense of personal responsibility — to convince people to get screened.

A simple recipe for persuasion is to make people feel vulnerable and then offer them hope, in the form of a simple strategy for protecting themselves. The standard approach is to induce vulnerability by emphasizing the risk people face, often framing statistics so as to provoke alarm, and then offer hope by exaggerating the benefit (and ignoring or minimizing the harms) of a risk-reducing intervention.

For example: “If you're a woman over 35, be sure to schedule a mammogram. Unless you're still not convinced of its importance. In which case, you may need more than your breasts examined. Find the time. Have a mammogram. Give yourself the chance of a lifetime” (see image). This screening campaign is an example of pure persuasion. No nuance here: breast cancer is so common and deadly, and mammograms so effective, that you'd have to be crazy to forgo screening.

Although the American Cancer Society ended that campaign in the 1970s, the use of persuasion is still going strong. For example, Memorial Sloan-Kettering Cancer Center, a top-rated cancer hospital, ran an ad in the *New York Times*

Magazine that read, “The early warning signs of colon cancer: You feel great. You have a healthy appetite. You're only 50” (see slide show at NEJM.org). Many 50-year-olds who find this message scary may be surprised (and relieved) to learn that most 50-year-olds who feel great and have a healthy appetite do not have — and will not soon develop — colon cancer. The National Cancer Institute estimates that a 50-year-old's risk of developing colon cancer over the next 10 years is 6 in 1000, and his or her risk of dying from colon cancer is 2 in 1000. The ad also implies that screening reduces the risk of dying from colon cancer by 90%, a claim far more optimistic than that supported by the evidence: a relative risk reduction of 26% with sigmoidoscopy, 33% with annual fecal occult-blood testing, and 67% with colonoscopy (although the estimated effect of colonoscopy hasn't been demonstrated in a



Mammography Screening Advertisement from the American Cancer Society, 1970s.

Other examples of persuasive screening campaigns appear in a slide show, available with the full text of this article at NEJM.org.

randomized trial). Nor does the message note any of the known downsides of screening, such as bleeding or colonic perforation.

Cancer screening ads are common marketing tools, built on hard-hitting messages rather than transparent information. For example, an ad on the website of the M.D. Anderson Cancer Center in Orlando reminds smokers to worry: “Are you a heavy smoker or ex-smoker over 50 years of age?

If so, you are at risk for developing lung cancer.” It then offers them hope at a bargain (another persuasive tactic): an office consultation, computed tomographic (CT) scan without contrast material, and a follow-up appointment to review the results, all for just \$375 — “a \$1,500 value.”

Persuasive messages stripped of useful facts might be justified if cancer screening didn’t carry harms. But research has increasingly shown that it does.² Effective screening tests undeniably

prevent some cancer deaths. For example, Papanicolaou (Pap) testing has had a major impact in reducing cervical-cancer mortality worldwide. But screening tests also cause harm: the anxiety and physical complications from the workup of false positive findings and the unnecessary treatment of “overdiagnosed cancers” — those never destined to cause symptoms or death.

In order to get past persuasion to informed decision making, we need to make it easy for doctors and patients to see the key data about screening tests’ benefits and harms in an appropriate context. Assorted groups have tried to promote better decision making about screening, though implementation has been slow. Now, momentum may be building.

For example, the National Cancer Institute (NCI) recently posted a “Patient and Physician Guide” for lung-cancer screening, which we designed in collaboration with the National Lung Screening Trial (NLST) Factsheet Working Group (see the Supplementary Appendix, available at NEJM.org). The one-page guide is designed to inform patients and to provide a context for a screening test that has been shown to be effective in a randomized clinical trial.

The guide summarizes the data from the NLST, a large, randomized trial of low-dose CT screening.³ The results of the trial, which enrolled a high-risk population (current and former smokers with at least 30 pack-years of smoking), were reported early when a benefit in terms of lung-cancer-related mortality was detected after an average of 6.5 years of follow-up. The guide provides a data table quantifying the benefits and harms of screening with low-dose CT versus chest radiog-

raphy. The table is adapted from the prescription-drug facts box, a design that has been shown to effectively communicate data about the benefits and harms of prescription drugs.⁴ Here, the table gives the absolute risks and risk differences for each outcome for both groups, using absolute risks because they are less likely than relative risks to exaggerate numerically small effects.⁵ Absolute risks are expressed in a frequency format (i.e., x in 1000), but another version that uses percentages is also available (at tdi.dartmouth.edu).

Context is an additional fundamental issue in communicating about the effects of screening. Patients — and many doctors — rarely see data on the absolute risks of death with and without screening, but absent such context, it’s hard for them to decide whether the risk reductions seen in a given trial are important to their decision-making process. The NCI guide attempts to provide context in a “take home messages” section, where it highlights the fact that low-dose CT is the only screening test whose use has been shown to reduce the chances of dying from lung cancer and the finding that this reduction is greater than that seen in the target cancers of other common screening tests, such as mammograms for breast cancer. This section also stresses the importance of being screened at an experienced center that is most likely to replicate the NLST’s results.

Although the guide notes the harms of false positive results and their complications, it does not discuss overdiagnosis, since quantitative analyses of overdiagnosis have not yet been published. Concerns have been raised about overdiagnosis with lung-cancer

 A slide show is available at NEJM.org

screening, but the magnitude of overdiagnosis in the NLST (with a scan at baseline and annually for 2 additional years) doesn't appear to be large³ and is probably less than that with mammography and substantially less than that with prostate-specific antigen screening.

Finally, the guide emphasizes the most important message for smokers: not smoking is the best way to reduce your overall risk of dying prematurely and your risk of dying from smoking-related diseases.

In issuing this guide, the NCI aims to help shift communication about screening toward approaches grounded in information rather than persuasion. It does so at a time when a new screening test for lung cancer is being introduced into clinical practice and

a multisociety collaborative (including the American Cancer Society and the American College of Chest Physicians) has issued new clinical recommendations.

We hope that similar data summaries will be developed for other tests and interventions. The intent should be neither to persuade people to undergo screening nor to dissuade them from doing so, but to increase the awareness of screening's benefits and harms so as to encourage informed personal decisions.

The views expressed in this article are those of the authors and do not necessarily reflect those of the Department of Health and Human Services, the National Institutes of Health, or the Department of Veterans Affairs.

Disclosure forms provided by the authors are available with the full text of this article at NEJM.org.

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DOI: 10.1056/NEJMp1209407

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Risk, Responsibility, and Generic Drugs

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In 2011, the Supreme Court reviewed *Pliva v. Mensing*, a consolidation of two cases in which patients sued the manufacturers of metoclopramide for failing to properly warn physicians and patients about the risk of tardive dyskinesia caused by its long-term use. A few years before, the Court had ruled that brand-name drug manufacturers had a duty to update their labels as new safety information became available, even without formal approval from the Food and Drug Administration (FDA). However, in *Pliva*, the drug was a generic version, and the Court found that it was "impossible" to hold generics manufacturers liable in state court for not updating their labels to integrate new warning information.¹ The Court's rationale was that these requirements were preempted by

legal requirements that generics manufacturers maintain labels identical to those of their brand-name counterparts.

Justice Clarence Thomas, writing for the five-to-four majority, noted that this decision could eliminate legal recourse for patients who were harmed by a generic drug. As predicted, after the *Pliva* ruling, dozens of failure-to-warn cases against generic-drug manufacturers were dismissed.² In response, a bipartisan group of lawmakers introduced legislation seeking to make generics manufacturers responsible for updating their labels just as brand-name drug companies are. The legislation remains under consideration in both the House and the Senate.

Liability issues surrounding generic drugs have been a point

of controversy in the United States since the emergence of a generic-drug industry in the 1960s. The earliest threats of liability for generic drugs were felt most keenly by pharmacists, not manufacturers. Initially, substituting drugs made by different manufacturers violated pharmacy codes of ethics and was explicitly illegal in most states. Yet to market a drug as a generic was to market it as substitutable — a fact that raised questions about the liability of the pharmacist in cases of injury from a medication that was selected not by a physician but by the dispensing druggist.

As a result, even when most states reversed course and passed laws in the 1970s and 1980s that permitted substitution, pharmacists generally chose not to fill prescriptions with a generic drug