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Framing Discussions About CT Scan Screening for Lung Cancer So That Patients See the Whole Picture

It is easier to get into something than to get out of it.

— Donald H. Rumsfeld

Secretary Rumsfeld likely had something other than implementation of lung cancer screening in mind when he uttered these prophetic words. However, as demonstrated by recent controversies in breast and prostate cancer screening, patients, clinicians, health-care systems, and payers should consider his warning as we begin widespread implementation of low-dose CT scan screening for lung cancer. It is crucial to consider both the benefits and risks of screening if we are to develop a patient-centered approach.

Among current and former heavy smokers, the National Lung Screening Trial (NLST)¹ showed impressive benefits of annual CT scan screening: reductions of 20% and 7%, respectively, in lung cancer and all-cause mortality. This relative reduction equates to a number needed to screen 320 patients to prevent one lung cancer death. However, the NLST also illustrated an important downside of CT scan screening: a high false-positive rate. Among individuals who underwent three annual screening CT scans, 39% had an abnormal finding that required further evaluation: 95% of these cases turned out to be falsely positive. In other words, for every 320 people screened for 3 years, one death was prevented but 119 people were found to have a false-positive result. Before lung cancer was ruled out, these healthy people were exposed to the potential harms of pulmonary nodule evaluation, including emotional distress, radiation exposure, and the risk of procedural complications.²

Because of these tradeoffs of lung cancer screening, there has been considerable controversy in the medical community about whether CT scan screening for lung cancer is ready to be implemented on a large-scale basis.^{3,4} To date, however, little has been heard from the patients themselves.

In this issue of *CHEST* (see page 1783), Tanner and colleagues⁵ take an important step forward by

examining veterans' perceptions of their personal risk of lung cancer, their attitudes toward CT scan screening, and their willingness to undergo surgery for lung cancer. These are all important issues because current and former smokers—the target demographic for lung cancer screening—tend to underestimate their risk of cancer and to be less receptive to both screening and surgery for lung cancer.^{6,7} Moreover, this study is particularly timely because many sites, including the Veterans Health Administration, are now beginning to implement CT scan screening programs for lung cancer.

Tanner and colleagues⁵ found that virtually all (93%) of their survey respondents would accept CT scan screening for lung cancer, a somewhat surprising result in light of prior surveys of attitudes toward screening among smokers.^{6,7} There is potential for bias in the design and administration of this survey, however, and as such, there are reasons to be cautious before concluding that CT scan screening for lung cancer would be so widely accepted.

First, the survey did not specifically target patients who would be eligible for lung cancer screening; in fact, only 27 of the 209 patients surveyed met NLST entry criteria and, thus, would be eligible for screening based on the American College of Chest Physicians and the American Society for Clinical Oncology guidelines.⁸ The other 202 patients likely reflect the general enthusiasm for screening prevalent in the United States.⁹ Although the authors note that the attitudes of the 27 respondents who met NLST criteria were similar to those of the rest of the participants, this sample is too small to be confident that it represents the views of all current and former smokers who would be eligible for lung cancer screening. Moreover, this survey was conducted at a single Veterans Affairs medical center and, as such, results may not be broadly generalizable.

Second, there is potential for respondent bias. If people interested in screening were more likely to participate in this study, then acceptance of screening would inevitably be overestimated. It is difficult to estimate the magnitude of this potential bias as the investigators did not systematically track response rate (they estimate that 25% of individuals approached refused participation).

Third, and most importantly, there are framing effects that may have powerfully influenced receptivity to lung cancer screening. The survey question on willingness to be screened is prefaced with the following introduction: "A special new type of CAT scan has been developed which can find small cancers in the lung. If this scan finds cancer when it is small, doctors believe that chances of curing the cancer is much better." After reading this sentence, which focuses exclusively on the benefits of lung cancer screening

and makes no mention of its potential downsides, it is not surprising that most participants reported a willingness to consider CT scan screening for lung cancer.

The wording of this question raises an important point for clinicians to remember. In discussing lung cancer screening with eligible individuals, it is critical to portray an accurate picture of the tradeoffs of screening so that patients can make an informed decision. Unfortunately, without such balanced information, Americans tend to overestimate the benefits of screening and underestimate the harms.⁹ As recommended in clinical practice guidelines,⁸ a shared decision-making approach can help patients decide if low-dose CT scan screening for lung cancer is the right choice for them. Fortunately, there are tools available to facilitate this discussion.^{10,11}

Tanner and colleagues⁵ have shown that most of the people they surveyed value the potential benefit of CT scan screening for lung cancer. It is crucial to listen to patients, and this result supports recommendations from the American College of Chest Physicians and the US Preventive Services Task Force for health-care systems to begin offering screening to eligible individuals.^{8,12} This finding can also help guide individual patient-clinician discussions about screening. However, it is prudent to recall Secretary Rumsfeld's admonition from a situation where the benefits and risks may have been misconstrued prior to implementation. Patients, with the help of their clinicians, should consider the consequences as well as the benefits before undergoing screening. When they have a false-positive result, they will not be able to easily extricate themselves from the subsequent harms. As clinicians, it is our responsibility to ensure that patients see the whole picture before they decide to be screened for lung cancer.

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