

# The United States Preventive Services Task Force Recommendations for Lung Cancer Screening



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## KEYWORDS

- United States Preventive Services Task Force • Lung cancer screening
- Agency for Healthcare Research and Quality • Computed tomography scanning • Lung cancer

## KEY POINTS

- The United States Preventive Services Task Force was created in 1984 and conducts scientific evidence reviews of a broad range of clinical preventive health care services.
- The United States Preventive Services Task Force is supported by the Agency for Healthcare Research and Quality.
- In 2013, the United States Preventive Services Task Force made a grade B recommendation for annual screening for lung cancer with low-dose computed tomography in adult patients age 55 to 80 years who have a 30 pack-year smoking history and currently smoke or have quit within the last 15 years.
- There is currently an open National Coverage Analysis for low-dose computed tomography screening for lung cancer.

## WHAT IS THE UNITED STATES PREVENTIVE SERVICES TASK FORCE?

Created in 1984, the United States Preventive Services Task Force (USPSTF) is an independent, volunteer panel of 16 nonfederal national expert members in evidence-based medicine, prevention, or primary care, which may include family physicians, behavioral health specialists, epidemiologists, internists, pediatricians, or nurses. The panel is led by a chair and 2 vice chairs. Task Force members are appointed by the Director of Agency for Healthcare Research and Quality (AHRQ) to serve 4-year volunteer terms. Members are screened to ensure that they have no substantial conflicts of

interest that could impair the scientific integrity of the Task Force's work. They conduct scientific evidence reviews of a broad range of clinical preventive health care services (such as screening, counseling, and preventive medications) and develop recommendations for primary care clinicians and health systems. Coverage, policy, or implementation strategies are beyond the scope of the USPSTF. Within the recommendations are clinician-oriented and patient-oriented fact sheets. These recommendations are published in the form of Recommendation Statements.

The recommendations of USPSTF are based on a review of existing peer-reviewed evidence and

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are intended to help primary care clinicians and patients decide together whether a preventive service is right for a patient's needs. The Task Force assigns each recommendation a letter grade (A, B, C, or D grade or an "I" statement) based on the strength of the evidence and the balance of benefits and harms of a preventive service (Table 1). The recommendations apply only to people who have no signs or symptoms of the specific disease or condition under evaluation, and the recommendations address only services offered in the primary care setting or services referred by a primary care clinician.

Since 1998, the AHRQ has been authorized by the US Congress to convene the Task Force and to provide ongoing scientific, administrative, and dissemination support to the Task Force. AHRQ originally began as the Agency for Health Care Policy and Research and was tasked with producing guidelines and is one of 12 agencies within the United States Department of Health and Human Services.<sup>1</sup>

Each year, the Task Force reports to Congress critical evidence gaps in research related to clinical preventive services and recommends priority areas that deserve further examination. Fig. 1

shows how the USPSTF plays a role in coverage in the United States.

### HOW HAS THE UNITED STATES PREVENTIVE SERVICES TASK FORCE PLAYED A ROLE IN THE COVERAGE PROCESS FOR LUNG CANCER SCREENING?

In 2013, the USPSTF made a grade B recommendation for annual screening for lung cancer with LDCT in adult patients age 55 to 80 years who have a 30 pack-year smoking history and currently smoke or have quit within the last 15 years. They deemed screening unnecessary once a person has not smoked for 15 years or develops a health problem that substantially limits life expectancy or the ability or willingness to have curative lung surgery.<sup>2</sup>

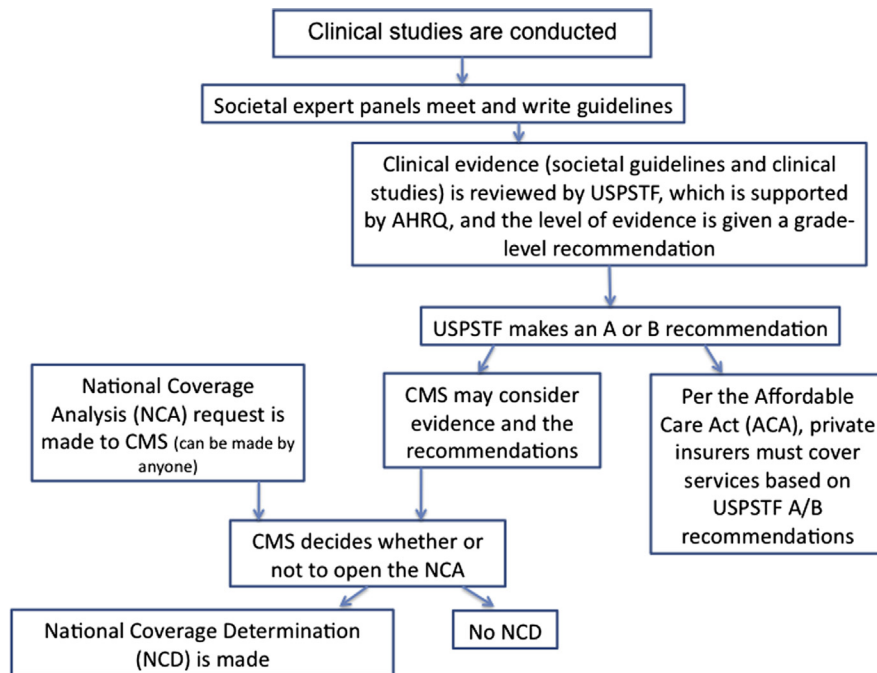
### WHAT WERE THE SPECIFIC THE UNITED STATES PREVENTIVE SERVICES TASK FORCE RECOMMENDATIONS?

The USPSTF found adequate evidence that annual screening for lung cancer with LDCT in a defined population of high-risk persons can prevent a

**Table 1**  
Grade of USPSTF recommendation

Grade	Definition	Suggestions for Practice
A	The USPSTF recommends the service. There is high certainty that the net benefit is substantial.	Offer or provide this service.
B	The USPSTF recommends the service. There is high certainty that the net benefit is moderate or there is moderate certainty that the net benefit is moderate to substantial.	Offer or provide this service.
C	The USPSTF recommends selectively offering or providing this service to individual patients based on professional judgment and patient preferences. There is at least moderate certainty that the net benefit is small.	Offer or provide this service for selected patients depending on individual circumstances.
D	The USPSTF recommends against the service. There is moderate or high certainty that the service has no net benefit or that the harms outweigh the benefits.	Discourage the use of this service.
I Statement	The USPSTF concludes that the current evidence is insufficient to assess the balance of benefits and harms of the service. Evidence is lacking, of poor quality, or conflicting, and the balance of benefits and harms cannot be determined.	Read the clinical considerations section of USPSTF Recommendation Statement. If the service is offered, patients should understand the uncertainty about the balance of benefits and harms.

From U.S. Preventative Service Task Force. Grade Definitions after July 2012. What the grades mean and suggestions for practice. Available at: <http://www.uspreventiveservicestaskforce.org/Page/Name/grade-definitions#grade-definitions-after-july-2012>. Accessed November 21, 2014.



**Fig. 1.** USPSTF coverage role in the United States as of 2014. (Adapted from U.S. Preventive Services Task Force. Procedure manual. AHRQ publication no. 08-05118-EF. 2008. Available at: <http://www.uspreventiveservicestaskforce.org/Page/Name/procedure-manual>. Accessed December 3, 2014.)

substantial number of lung cancer–related deaths. Direct evidence from the National Lung Screening Trial (NLST), which was a large, well-conducted, randomized, controlled trial, provided moderate certainty of the benefit of lung cancer screening with LDCT in this population.<sup>3</sup> They noted screening cannot prevent most lung cancer–related deaths, and smoking cessation remains essential.

The USPSTF found insufficient evidence on the harms associated with incidental findings. Overdiagnosis of lung cancer occurs, but its precise magnitude is uncertain. A modeling study performed for the USPSTF estimated that 10% to 12% of screen-detected cancer cases are overdiagnosed—that is, they would not have been detected in the patient’s lifetime without screening.<sup>2</sup> Radiation harms, including cancer resulting from cumulative exposure to radiation, vary depending on the age at the start of screening, the number of scans received, and the person’s exposure to other sources of radiation, particularly other medical imaging.

The USPSTF concluded with moderate certainty that annual screening for lung cancer with LDCT is of moderate net benefit in asymptomatic persons who are at high risk for lung cancer based on age, total cumulative exposure to tobacco smoke, and years since quitting smoking. The

moderate net benefit of screening depends on limiting screening to persons who are at high risk, the accuracy of image interpretation being similar to that found in the NLST, and the resolution of most false-positive results without invasive procedures.<sup>3</sup> The USPSTF recommended extending the program used in the NLST through age 80 years. The USPSTF recommended discontinuing screening if a person has not smoked for 15 years or if the person develops a health problem that substantially limits life expectancy or the ability or willingness to have curative lung surgery. USPSTF determined current evidence was lacking on the net benefit of expanding LDCT screening to include lower-risk patients.<sup>2</sup> USPSTF supports the future development of risk assessment tools to help clinicians better individualize patients’ risks.<sup>4</sup>

## SMOKING CESSATION COUNSELING

To be consistent with the USPSTF recommendation on counseling and interventions to prevent tobacco use and tobacco–caused disease, persons who are referred to a lung cancer screening program through primary care should receive smoking cessation interventions before referral. Because many persons may enter screening through pathways besides referral from primary

care, the USPSTF encouraged incorporating such interventions into the screening program.

### **OTHER UNITED STATES PREVENTIVE SERVICES TASK FORCE RECOMMENDATIONS RELATED TO LUNG CANCER SCREENING**

Shared decision making is a part of the framework of every USPSTF recommendation and is emphasized in their recommendations for lung cancer screening. The USPSTF supports adherence to quality standards for LDCT<sup>5</sup> and establishing protocols to follow up on abnormal results, such as those standards proposed by the National Comprehensive Cancer Network.<sup>6</sup> The Network recommended mechanisms be implemented to ensure adherence to these standards. The USPSTF encourages the development of a registry to ensure that appropriate data are collected from screening programs to foster continuous improvement over time. The registry should also compile data on incidental findings and the testing and interventions that occur as a result of these findings. This recommendation was made to help future analyses clarify issues related to the management of indeterminate nodules. Several studies were used in the USPSTF recommendation process.<sup>3,7–19</sup> These studies specifically aided them in determining the effectiveness of early detection and treatment, estimating the magnitude of net benefit and determining how the evidence fits with biologic understanding. The USPSTF did not cite the American Association of Thoracic Surgeons Guidelines or the American College of Surgeons Guidelines for lung cancer screening as part of this section analyzed, but do refer to their findings as sources.<sup>20,21</sup>

### **OPENING THE UNITED STATES PREVENTIVE SERVICES TASK FORCE RECOMMENDATION TO PUBLIC COMMENT**

A draft version of the recommendation statement was posted for public comment on the USPSTF Web site from 30 July to 26 August 2013. In response to comments, the USPSTF further emphasized the importance of tobacco cessation as the primary way to prevent lung cancer and provided links to resources that clinicians can use to help their patients quit smoking. A section on implementation of a screening program was added, emphasizing the need for monitoring this implementation, quality assurance in diagnostic imaging, and appropriate follow-up to replicate the benefits observed in the NLST in the general population. The USPSTF also clarified that, in addition to age and smoking history, such risk factors as occupational exposure, family history, and history

of other lung diseases are important when assessing patients' risks for lung cancer.

The USPSTF acknowledged the importance of accurately identifying persons who are at highest risk to maximize the benefits and minimize the harms of screening and calls for more research to improve risk assessment tools. The USPSTF did not incorporate the costs of a screening program or the potential savings from a reduction in treatment of advanced lung cancer into the recommendation.

### **UPDATE OF PREVIOUS UNITED STATES PREVENTIVE SERVICES TASK FORCE RECOMMENDATION**

This recommendation updates the 2004 recommendation, in which the USPSTF concluded that the evidence was insufficient to recommend for or against screening for lung cancer in asymptomatic persons with LDCT, chest radiography, sputum cytologic evaluation, or a combination of these tests. Currently, the USPSTF recommends annual screening for lung cancer with LDCT in persons who are at high risk based on age and cumulative tobacco smoke exposure.

### **WHAT DOES UNITED STATES PREVENTIVE SERVICES TASK FORCE RECOMMENDATION MEAN FOR MEDICARE BENEFICIARIES?**

There is currently an open National Coverage Analysis for LDCT screening for lung cancer, which was scheduled to be issued November of 2014. As part of this process, a Medicare Evidence Development and Coverage Advisory Committee was convened at the request of the Centers for Medicare and Medicaid to assist in reviewing evidence. The committee met April 30, 2014. When answering the question, "How confident are you that there is adequate evidence to determine if the benefits outweigh the harms of lung cancer screening with LDCT... in the Medicare population?" the committee found low confidence in LDCT for screening.<sup>22</sup>

### **HOW WILL UNITED STATES PREVENTIVE SERVICES TASK FORCE RECOMMENDATIONS AFFECT PRIVATE INSURERS?**

In practical terms, the USPSTF recommendations will likely mean a large increase in actual screening rates. Primary care physicians largely had not been recommending computed tomography lung cancer screening, which few insurance companies previously covered. Under the Affordable Care Act, insurance companies are now required to cover any screening service that is given an A or

B rating by the USPSTF without any copay or deductible.

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