NORTH CAROLINA
Advisory Committee
on Cancer Coordination and Control

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Lung Cancer Screening Position Statement

Tremendous progress in the diagnosis and staging of non-small cell lung cancer (NSCLC) has been made over the last two (2) decades, and the last five years have witnessed major advances in treatment, with estimated 5-year survival rates for all stages combined improving from 16% to 24% (Local 61%, Regional 35%, Distant Metastases 6%). Nevertheless, the main reason for poor survival is largely due to the fact that the majority of patients with NSCLC are diagnosed with locally advanced (Stage IIIa or IIIb) or metastatic (Stage IV) disease at the time of diagnosis. This underscores the importance of screening to maximize early detection, especially in people at high risk for developing NSCLC. In 2011, the results of the prospective randomized National Lung Screening Trial (NLST) were published. The NLST was a randomized study of 53,454 high-risk individuals (between the ages of 55 and 74, with greater than a 30-pack year smoking history, and if they had stopped smoking, had done so within 15 years of study enrollment) who received three annual screenings with either low-dose CT (LDCT) or single-view chest radiography. Three annual LDCT screens reduced lung cancer specific mortality from 309 to 247 deaths per 100,000 person-years (Relative risk of 0.8) or a relative risk reduction of 20%. The utility of LDCT for screening high-risk patients was recently corroborated with the Dutch-Belgian NELSON trial, showing a 24% reduction in lung cancer mortality, as well as the Italian MILD trial, demonstrating a 39% reduction in lung cancer-related mortality.

Several health organizations have used this data to produce guidelines recommending screening in individuals at risk for lung cancer. Guidelines from the National Comprehensive Cancer Network (NCCN), American Cancer Society (ACS), American Lung Association (ALA) and the American College of Chest Physicians (ACCP) recommend screening patients within the age range of 50-80 (depending on organization), with at least a 30 pack-year history of smoking, who either currently smoke or have quit within the past 15 years. These recommendations paved the way for reimbursement from Medicare and private insurance. In 2015, the Centers for Medicare and Medicaid Services (CMS) began coverage for LDCT in high risk, asymptomatic patients ages 55 – 77, 30-pack years of smoking or more, having quit smoking less than 15 years, and having had a documented shared decision-making interaction with the ordering provider.

More recent modeling analyses strongly suggest that starting screening earlier and lowering the pack-year requirement are beneficial. The U.S. Preventive Services Task Force (USPSTF) gave a grade B recommendation for screening for lung cancer and issued a revised recommendation for annual screening with LDCT in adults aged 50 through 80 who have a 20 pack-year history of smoking or who have quit in the past 15 years (updated 7.10.2020). Screening should be discontinued once a person has not smoked for 15 years or develops a health problem that limits life expectancy or the ability to have curative treatment, should lung cancer be diagnosed. It is expected that CMS and private insurers will adjust to accommodate the updated USPSTF guidelines.

It is important to note that the ACS, ACCP, and USPSTF advise caution in weighing the benefit of screening against potential harms which include false negatives, false positives, incidental findings, over-diagnosis, radiation exposure, and psychological stress. Over-diagnosis is a concern since some of the screen-detected cancer cases wouldn't have been detected in the patient's lifetime. False positive scans are also a concern since they may lead to an increase in additional invasive diagnostic procedures, which can lead to unnecessary evaluations and potential complications. However, the re-categorizing of positive nodules from 4mm to 6mm in diameter resulted in a 50% reduction of false positives and this Lung-RADS classification change is now widely used in screening programs.

Of additional great importance is the emphasis to the public that screening is not a substitute for smoking cessation. It is imperative that all lung cancer-screening programs provide smoking cessation counseling and resources for patients because lung cancer screening coupled with smoking cessation has the opportunity to save more lives than screening alone.

Table: Summary of Screening Recommendations

	ACS	ALA	ACCP	USPSTF
Lung Cancer Screening (LDS) Low-dose Computed Tomography (LDCT)	Age 50 to 74 years with ≥ 30 pack year smoking history, who either currently smoke or have quit within the past 15 years, and who are in relatively good health.	Age 55 to 80 years with ≥ 30 pack year smoking history or have quit within the past 15 years. No history of lung cancer.	Age 55 to 77 years with ≥ 30 pack year smoking history, who either currently smoke or have quit within the past 15 years.	Age 50 to 80 years with ≥ 20 pack year smoking history, or who have quit within the past 15 years.

Given the recent confirmation of the original NLST study in two additional independent trials, the close similarity in screening recommendations by multiple cancer health advocacy organizations, and the recent updated guidelines from USPSTF, NC ACCCC recommends adherence to the USPSTF guidelines. NC ACCCC also recommends that scientific evidence related to lung cancer screening be re-examined in five years (2025). If compelling evidence that significantly impacts these screening guidelines becomes available before the scheduled review, the NC ACCCC recommends immediate review of the current position statement.

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