

Lung Cancer Screening Policy in Alaska and Occupational Therapy

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Lung cancer claims more lives than any other cancer in the world and remains difficult to diagnose in the early stages. This article examines the current state of lung cancer detection and screening via low-dose computed tomography (LDCT) in Alaska and considers potential opportunities for occupational therapy practitioners in primary care settings. Medicare requires at least one documented shared decision-making encounter between provider and patient before LDCT lung cancer screening occurs. As a result of time constraints, documentation requirements, and the plethora of preventive health services they provide, primary care physicians often lack the time and training to conduct this essential service. This provides an opportunity for occupational therapy practitioners to perform these services as part of their practice and to play a role in this area as patient educators and prevention specialists in primary care settings.

What This Article Adds: This article explores the national health crisis of lung cancer and describes how occupational therapists can participate in providing care in primary care settings.

Lung cancer claims more lives than any other cancer in the world. In 2018, an estimated 142,670 people in the United States died from lung cancer, with an estimated 228,150 new lung cancer diagnoses (Centers for Medicare & Medicaid Services [CMS], 2020). The incidence of lung cancer is predicted to increase in developed countries, especially among women; lung cancer now claims more lives than breast cancer (Martín-Sánchez et al., 2018).

Late diagnosis of lung cancer is a global concern that transcends disciplines and health care systems. Late diagnoses are attributed to many causes, such as late presentation by the patient to providers, imprecise screening tools, lack of provider knowledge about lung cancer, and gaps in health care systems with respect to referrals and follow-up care (Singh et al., 2010, 2012; Wagland et al., 2017). The current literature highlights a need for research from a variety of perspectives and professions to fully address the issue (Salomaa et al., 2005; Singh et al., 2007). To promote early detection of lung cancer and decrease mortality, global experts recommend more research and policies targeting early detection and diagnostic methods, including the multidimensional factors associated with lung cancer detection (Andreano et al., 2018; Wong, 2018). Late diagnosis is especially disheartening for lung cancer researchers because survival rates for people diagnosed with Stage III or IV lung cancer have increased only modestly in the past 40 yr (Johnson et al., 2014). More research, especially in geographic areas that lack access to health care, is necessary to understand the barriers to lung cancer detection in community settings (Rai et al., 2019).

Literature Review

Many screening options, such as sputum cytology, chest radiography, and low-dose computed tomography (LDCT), have been trialed to diagnose lung cancer and reduce mortality. In 2013, the U.S. Preventive Services Task Force (USPSTF) recommended lung cancer screening by LDCT for high-risk patients (Moyer, 2014). The USPSTF LDCT lung cancer screening guidelines define *eligible patients* as asymptomatic adults ages 55 to 80 yr who have a 30 pack-year smoking history and currently smoke or have quit within the past 15 yr (Moyer, 2014). This recommendation was

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based on the National Lung Screening Trial, which took place from August 2002 through April 2004 ([National Lung Screening Trial Research Team \[NLSTRT\], 2011](#)).

This randomized trial of screening examined more than 50,000 participants who were separated into two groups to receive three screenings at 1-yr intervals. The treatment group received screening via LDCT over 3 yr, and the control group received screening via chest radiography ([NLSTRT, 2011](#)). Chest radiography was chosen for the control group because this is common practice in community health centers. The trial found a 20% reduction in mortality in the LDCT group compared with the radiography group, with nearly identical participant demographics in both groups. It also reported a higher incidence of Stage I and II cancers detected with LDCT compared with chest radiography. Limitations of this trial include bias from the healthy volunteer effect, lack of participant diversity, use of less advanced scanners in the trial as compared with general use (potentially leading to more false-positive results), and participation by more advanced radiology and detection experts than many communities have access to ([NLSTRT, 2011](#); [Rai et al., 2019](#)).

More recently, [Usman Ali et al. \(2016\)](#) conducted a systematic review and meta-analysis of lung cancer screening studies in Europe, the United States, and Canada over the past 50 yr. Results indicated that LDCT lung screening is the preferred method, whereas chest radiography, with or without sputum cytology, is not recommended ([Usman Ali et al., 2016](#)). Despite the favorable results recommending LDCT lung cancer screening reported in this meta-analysis, which included the National Lung Screening Trial, [Jemal and Fedewa \(2017\)](#) found minimal change in screening rates following publication of the USPSTF guideline. Rates of LDCT screening, obtained by means of the National Health Interview Survey, remained similarly low in 2015 compared with 2010 (increasing from 3.3% to 3.9% of the percentage of eligible smokers who reported LCDT screening), demonstrating that the available screening is underused despite the approval of governing entities ([Jemal & Fedewa, 2017](#)). More than half of those eligible for the screening were either uninsured or received Medicaid, with coverage varying by state ([Jemal & Fedewa, 2017](#)).

Implementation of the USPSTF LDCT lung cancer screening guidelines has proven difficult because of barriers to meeting the recommendations, in both access and education. Potential harms of the LDCT screening include false-positive results, radiation exposure, high cost to the patient, and overdiagnosis ([Moyer, 2014](#); [Rai et al., 2019](#); [Usman Ali et al., 2016](#)). The high prevalence of false positives or detection of benign nodules, leading to further testing and potentially invasive procedures, remains a large deterrent to the uptake of LDCT screening ([Bach et al., 2012](#); [Lewis et al., 2015](#); [Rai et al., 2019](#)). These harms may be even more prevalent in community settings if the screening is not appropriately implemented ([Rai et al., 2019](#)). In addition, as a result of the stage of cancer, only one-third of newly diagnosed lung cancers are expected to be curable through treatment, which raises questions regarding the clinical value of screening ([Barnes et al., 2016](#)).

The [NLSTRT \(2011\)](#) found that complications from LDCT lung cancer screening were uncommon and rare. Despite this finding, studies have demonstrated providers' fears regarding this issue and their belief that the risks outweigh the potential benefits, which may limit the adoption of LDCT for lung cancer screening by referring providers ([Henderson et al., 2018](#); [Zeliadt et al., 2018](#)). Moreover, research has shown that only half of primary care providers (PCPs) are aware of the USPSTF lung cancer screening recommendations ([Li et al., 2018](#)), making use of LDCT for lung cancer screening difficult. Fewer than half of PCPs at an academic center were aware of three or more of the six USPSTF LDCT guideline components for lung cancer screening ([Lewis et al., 2015](#)).

Cost, access, and providers' perceptions of lung cancer screening were identified as primary barriers to recommending LDCT ([Henderson et al., 2018](#); [Raz et al., 2016](#); [Zeliadt et al., 2018](#)). Private insurers are required to cover the cost of LDCT without cost sharing; Medicare Part B added annual LDCT lung screening as a preventive benefit at approved facilities, yet Medicaid coverage varies by state ([American Lung Association, 2019a](#); [CMS, 2016](#); [Rai et al., 2019](#)). In Alaska, for example, the cost of LDCT for lung cancer screening is \$375 for the technical imaging regardless of insurance, plus \$175 to \$200 for the radiologist's interpretation (Providence Health and Services, personal communication, March 28, 2019). Providers may be unaware of the actual coverage details, and the long-term financial

costs of implementation remain unknown (Rai et al., 2019). In a survey study of medical directors, only 6.4% of respondents indicated that no barriers exist to providing the recommended screening (Zeliadt et al., 2018). Despite barriers to and lack of awareness of LDCT lung cancer screening, though, Zeliadt et al. (2018) also found that most respondents believed lung cancer screening should be provided by their particular organization for it to be a leader in cancer prevention.

CMS requires shared decision making (SDM) between provider and patient to discuss the benefits and harms of LDCT lung cancer screening (Barnes et al., 2016; Rai et al., 2019), and this counseling visit is billable under Medicare's guidelines (American College of Radiology, 2019; Rai et al., 2019). Patients who participate in SDM indicate higher confidence and less regret regarding their decision (Søndergaard et al., 2019). Unfortunately, evidence shows that the SDM in LDCT lung cancer screening conversations is poor (Brenner et al., 2018). Limited time with patients to discuss the screening was considered a barrier by both attending and resident primary care physicians (Henderson et al., 2018). Brenner et al. (2018) reported an average visit length of 13:07 min with people who meet the criteria for LDCT lung cancer screening, with 59 s devoted to discussing the implications of the screening, warranting a score of only 6 of 100 on the Observing Patient Involvement in Decision Making scale (Elwyn et al., 2005). These findings imply that when lung cancer screening via LDCT was mentioned in an office visit, minimal discussion occurred regarding its potential, either harmful or beneficial (Brenner et al., 2018). When considering SDM conversations between patients and providers, it is important to consider health literacy. Low health literacy has been associated with low cancer screening uptake (Humphrys et al., 2019); the combination of low health literacy and the complexity of screenings may decrease patients' engagement in the discussion (Amalraj et al., 2009).

Policy Perspective: Occupational Therapy's Involvement in Lung Cancer Screening

Research conducted in Alaska to assess lung cancer detection throughout the patient–provider–system continuum (Kowalski, 2020) has indicated that occupational therapy practitioners can play a role in facilitating lung cancer detection and in aiding education on LDCT lung cancer screening. This research included a mixed methods survey study of providers, a case study of participants with late-stage lung cancer, and an assessment of opportunities to improve lung cancer detection in Alaska (Kowalski Frank, 2020). This research indicates that policy changes require attention in three areas: systemic change, prevention, and education.

Systemic Change

Opportunities for systemic transformation to promote the earlier detection of lung cancer include policy changes and adjustments to the health care system. Policy changes could include universal health care to ensure screening coverage. In Alaska, LDCT lung cancer screening is not paid for by Medicaid regardless of a patient's historical eligibility (American Lung Association, 2019b); therefore, the cost burden falls on patients. Medicaid recipients may choose to forgo the screening or pay for it out of pocket. People who are diagnosed with late-stage lung cancer are typically current or former smokers, belong to a lower socioeconomic class, are unmarried men, and are diagnosed with other comorbidities (Hansen et al., 2008; Smith et al., 2009). Screening may have a ripple effect, requiring time off work, travel from remote areas, and diminished income if paying privately. These are all barriers to promoting policy change, given the lack of voice possessed by people of lower socioeconomic classes, as well as the stigma surrounding smokers.

Large-scale system factors meant to promote LDCT screening include increasing physicians' time with patients, altering documentation requirements, and abolishing the prescription requirement for LDCT screening. As mentioned earlier, insurance reimbursement for LDCT lung screening requires SDM. This requirement adds to an already overwhelming documentation system; 45% of family medicine physicians' workday (4.5 hr) is spent on electronic health record (EHR) tasks, which can infringe on their personal lives and lead to burnout (Arndt et al., 2017). Another study

found a 2:1 ratio of documentation time to patient care time in ambulatory care disciplines (Sinsky et al., 2016). Current documentation requirements include, but are not limited to, prescription management, order entry, billing and coding, phone calls, and letter generation, all of which law or insurance companies typically require physicians to complete and cannot be delegated (Arndt et al., 2017). Methods to decrease time spent on EHR tasks require study in their own right. Possible solutions are group LDCT lung cancer screening education classes taught by designated clinical specialists (Sakoda et al., 2019) and telephone-based decision counseling (Fagan et al., 2020). Although occupational therapy practitioners cannot currently bill for LDCT lung cancer screening, they have the potential, with proper education in such screening, to become designated clinical specialists to carry out SDM conversations.

Finally, LDCT lung cancer screening requires a provider's prescription (American College of Radiology, 2019). Typically, PCPs write the prescription, yet some facilities require a pulmonologist's prescription, thus creating another stop along the diagnostic pathway. The participants in Kowalski's (2020) survey study advocated for walk-in screening capabilities, similar to mammography, in which patients can request the screening on their own without a prescription (CMS, 2020). That may be available at some point, but it will apply only to people under specific insurance plans; Medicare's SDM requirements necessitate at least two appointments with a PCP.

Prevention

Cancer prevention in primary care often includes treatment and education in the following areas: smoking cessation, diet and exercise, sun exposure, screening, and general health (DePue et al., 2008). In addition to the patient's medical concerns, this education and treatment often fall on the shoulders of PCPs, as illustrated by the response of one provider to Kowalski's (2020) survey study:

In the amount of time allotted for docs to see a patient (for routine medical follow-up and/or preventive services), there are a myriad of recommended preventive services he/she is encouraged to provide, as well as complex ongoing medical treatment to optimize. Under such limitations, the use of a relatively young screening paradigm may be deprioritized (versus other tasks that deserve to get done) during the visit. (p. 83)

Research has also indicated that time constraints limit physicians' ability to comply with preventive services recommendations (Yarnall et al., 2003), leaving a gap in care that needs to be filled. An emphasis on prevention also presents an opportunity to prevent or diagnose lung cancer earlier by increasing the capacity of the primary care workforce by including additional health care professionals to create a medical home model of care. Primary care should not be limited solely to medical providers; rather, health care providers should represent the broad spectrum of health care (Berwick et al., 2008; Pershing & Fuchs, 2013). Given this, a need exists for a variety of health care providers to practice in primary care in order to promote collaboration and interprofessionalism and to meet the intention of primary care. We advocate for occupational therapy's involvement in primary care to address issues of task delegation and prevention practices.

Occupational therapy practitioners have an opportunity to meet the needs of the population via preventive care services in primary care. Several studies have examined occupational therapists' efficacy as preventive care providers in primary care settings (Chamberlain et al., 2019; Fleischer & Fleischer, 2019; Pape & Muir, 2019). By involving occupational therapy practitioners in primary care, more people may receive the care they need to live healthful and functional lives and decrease the impact of chronic conditions, such as cancer. Allowing providers to maximize their training improves interprofessional collaboration and productivity (Butala et al., 2019); integrating occupational therapy practitioners into primary care may therefore promote preventive and early detection opportunities.

Education

A lack of awareness exists regarding the symptoms of lung cancer and awareness of screening options. [Simmons et al. \(2017\)](#) reported a lack of LDCT lung cancer screening knowledge among PCPs and high-risk individuals. This decreased awareness may result in fear or resistance, which providers cite as barriers to diagnosing lung cancer.

Increasing awareness of lung cancer symptoms and LDCT lung cancer screening may alleviate fear and resistance once patients have an understanding of the issue. Other researchers have reported similar conclusions, indicating a widespread need for marketing campaigns and patient education ([Ersek et al., 2016](#); [Li et al., 2018](#)). Media marketing, mentioned in [Kowalski Frank's \(2020\)](#) survey results as “mass advertising for screening tests” and “more public service announcements educating people that screening is an option targeted at the right demographic” (p. 84), may not be enough to expand awareness, because patients prefer to learn about the screening from their medical team ([Simmons et al., 2017](#)). Expanding occupational therapy practitioners' roles on the health care team may decrease the burden on PCPs while providing necessary education to patients.


Given the relative newness of LDCT lung cancer screening, providers also require education regarding the USPSTF LDCT guidelines. [Kowalski Frank \(2020\)](#) confirmed the findings of other studies ([Ersek et al., 2016](#); [Kanodra et al., 2016](#); [McDonnell et al., 2019](#)) reporting that physicians and nurses need such education. Educational opportunities may target various disciplines that provide primary care, such as alternative care providers, as well as providers who function as PCPs, such as women's health providers. [Kowalski's](#) survey study found that women's health providers were those least likely to be familiar with LDCT lung cancer screening guidelines and that they lacked confidence in assessing for lung cancer, with 60% agreement. Write-in responses also indicated a need to receive “buy-in by the alternative therapy community—DC [Doctors of Chiropractic], ND [Doctors of Naturopathy], etc.” (p. 87). In addition, the survey was completed by providers in fields such as ophthalmology and oncology that require awareness of LDCT screening, especially among asymptomatic patients, to at least recommend consultation with the patients' PCP.

Implications for Occupational Therapy Practice

The [American Lung Association \(2020\)](#) reported that rates for newly diagnosed lung cancer cases in Alaska are equivalent with the national average. [Kowalski's \(2020\)](#) study provides a baseline for future research on the implementation of lung cancer detection measures across the United States, including LDCT lung cancer screening, educational tools, and policy changes. In addition, two new questions emerged from [Kowalski's \(2020\)](#) research: (1) Can fatigue be objectively measured over time to assess a change, and (2) how does functional decline reflect cancer stage? The creation of objective assessment tools for the nonspecific symptoms of lung cancer may facilitate diagnostic connections between daily life activities and body functions and structures. The *Occupational Therapy Practice Framework: Domain and Process* (4th ed.; [American Occupational Therapy Association, 2020](#)) articulated the interconnections among daily life occupations, contexts, performance patterns, performance skills, and client factors. To answer these questions, future research should focus on simple functional assessments for use in primary care, a risk stratification protocol, and inclusion of other health care disciplines in primary care to provide preventive care. In addition, the results indicate the need for governing bodies to provide assistance with implementation along with screening guidelines to promote uptake of the recommendations.

Conclusion

We have summarized the policy issues regarding lung cancer screening via LDCT. Occupational therapy practitioners may not be aware of LDCT lung cancer screening, but the potential exists for them to participate in such screening. Opportunities in this area include educational initiatives for clients regarding lung cancer symptoms and screening and for providers regarding LDCT lung cancer screening guidelines and methods to ascertain patients' functional status and non-disease-specific symptoms. Education plays an important role in the outcome of each patient encounter, whether it

relates to patients' health literacy or providers' expertise, both of which can promote or decrease diagnostic accuracy. This article also suggests the need to increase the capacity of the primary care workforce by including additional health care professionals to meet the growing demand for preventive education and treatment. Finally, this article underscores the need for systemic change to facilitate improved care by increasing time with patients, simplifying and streamlining documentation, and creating direct patient access to LDCT lung cancer screening. 

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