Development and Evaluation of a Lung Cancer Screening Decision Aid

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Lung cancer is the second most common cancer; however, it often is not diagnosed until the advanced stages. Early-stage lung cancer is curable, but screening tools are not usually implemented in practice because of a lack of provider awareness. A lung cancer screening decision aid may increase screening use and, ultimately, reduce lung cancer deaths.

At a Glance

- Lung cancer screening decreases mortality.
- Informed decision making is crucial in optimizing screening.
- A majority of prescribers surveyed believe that the lung cancer screening decision aid described in this article is beneficial to their patients.

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Lung cancer is the leading cause of cancer-related death (27%), with a five-year survival rate of just 18% (American Lung Association, 2015). Early-stage lung cancer is curable with surgical intervention but accounts for only 16% of lung cancer diagnoses (Infante et al., 2015); therefore, prevention and early detection are crucial in decreasing mortality. The U.S. Preventive Services Task Force ([USPSTF], 2014) released a set of guidelines for the use of low-dose radiation computed tomography (CT) scans of the lung for the screening of lung cancer in people who are at risk, including individuals who are (a) aged 55–80 years, (b) have at least a 30 pack-year history, and (c) currently smoke or have quit smoking within the past 15 years. The guidelines received a B-level recommendation from the USPSTF, requiring it to be adopted and covered by all private insurances offered through the health insurance marketplace (American Lung Association, 2015). The Centers for Medicare and Medicaid Services (2015) subsequently began to offer coverage in February 2015.

A need exists to increase awareness of lung cancer screening guidelines. In particular, the American Lung Association (2015) has identified the need for decision aids to assist with increasing participation and addressing patient concerns. This article will (a) discuss the evidence and recommendations related to lung cancer screening and (b) describe the development and evaluation of a new patient decision aid.

Literature Search

A literature search was conducted to explore lung cancer screening and the benefits of decision aids cited in the PubMed, Cochrane, and CINAHL® databases from January 2011 to January 2016. The Johns Hopkins Model (JHM) for the evaluation of evidence was used to evaluate the publications. Research-based articles that employed a quasi-experimental or experimental design and were determined to be of good or excellent quality, according to JHM, were included (Dearholt & Dang, 2012). Evidence-based clinical guidelines, position statements, and systematic reviews were also considered for inclusion. Ten articles regarding the use of low-dose CT for lung cancer screening and five articles pertaining to the use of decision aids were included.

Three major randomized clinical trials (Aberle et al., 2011; Infante et al., 2015; Saghir et al., 2012) studied the efficacy of using low-dose CT compared to chest radiography for the detection of lung cancer among those at high risk. The largest study with the highest level of evidence was the National Lung Screening Trial (NLST). From 2002–2009, the NLST enrolled 53,454 participants aged 55–74 years who had at least a 30 pack-year history of smoking and, if former smokers, had quit within the past 15 years (Aberle et al., 2011). Participants were randomized into the low-dose CT screening group or the chest radiography group. The NLST found that screening with low-dose CT resulted in a 20% reduction in mortality because of early detection of lung cancer (95% confidence interval [6.8, 26.7], $p = 0.004$). This momentous trial showed that screening those at high risk with annual low-dose CT was useful in reducing lung cancer mortality (Aberle et al., 2011). Although other studies have not been able to replicate