

CLINICAL PERSPECTIVE

Missed Opportunities: The Case for Inpatient Lung Cancer ScreeningJoe Johnstone¹, Andrea Covey²¹University of Kansas Medical Center, Kansas City KS²Kansas City Veterans Administration Hospital, Kansas City MO

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Over the past twenty years, the hospitalist field has grown from an uncommon metropolitan profession to a ubiquitous, broad specialty focused on the rapidly evolving field of inpatient medicine¹. Hospitalists are no longer limited to acute medical conditions; the hospitalist in 2021 has an ever-broadening scope of practice and is increasingly seen as an expert in transitions of care, quality improvement, and high value medicine². Their role in public health is increasingly recognized by their work in infection control, antibiotic stewardship, addiction medicine, and smoking cessation to name a few. Hospitalists can continue their innovation and improve care by recommending and performing lung cancer screening (LCS). The coronavirus pandemic advanced the field of telehealth significantly and bundling of in-person services is the natural progression of this trend.

A divide between primary care and hospitalists was created by silo-ing medical care as well as by the advent of electronic medical records (EMR). Most inpatient settings now have EMR yet outpatient access remains variable. Many have tried bridging this with some hospitalists now reminding patients upon discharge to take care of their annual health screenings such as mammograms and colonoscopies. In surveys of hospitalized women due for breast cancer screening, nine out of ten thought it was important they discuss cancer screening with their hospitalist and a majority were willing to undergo inpatient screening³. A pilot program at an academic medical center demonstrated viability by harnessing the EMR to identify and automatically notify hospitalist of eligible women⁴. Seventeen of twenty-one patients were successfully screened without increasing length of stay.

For a third of patients this was their first mammogram or were overdue by greater than four years. National data shows that lung cancer screening has been significantly underutilized prior to Covid⁵, and recent studies have confirmed that the pandemic has adversely affected routine screenings for breast and colon cancer⁶. The hospitalists' routine use of EMRs makes recommending screening for lung cancer on discharge a significant improvement in the standard of care. Innovative ideas such as using time during a non-pulmonary hospitalization to perform lung cancer screening would significantly increase adherence to national screening recommendations.

The National Lung Screening Trial (NLST) changed lung cancer from a grim diagnosis with a short life expectancy to a condition that can be screened for and often cured by identifying the first effective means of screening with low dose CTs (LDCT)⁷. Prior to this there were failed attempts at using chest x-rays and sputum cytology, all with no meaningful effect on mortality. Annual low dose CT surveillance produced a 20% decrease in lung cancer deaths and a 6% all-cause mortality benefit. The NELSON trial⁸ confirmed significant benefits to LCS and the United States Preventive Services Task Force recently expanding lung cancer screening recommendations to current and former smokers aged 50-80 with a minimum 20 pack/year smoking history and life expectancy greater than five years. Raw application of NLST mortality benefits would avoid twelve thousand lung cancer deaths annually, however a 2019 study found

in a population of over four thousand eligible patients, only fourteen percent had undergone screening⁹. With this nation's 36 million annual hospitalizations, the large population in need, and the noninvasive, rapid nature of LDCT, hospitalizations are an underutilized setting to provide lung cancer screening.

Modern technology and division of labor make recommending lung cancer screening well within the scope of a busy hospitalist. Eligibility criteria is straightforward for the clinician and screening algorithms implemented in EMRs are now quite sophisticated in excluding patients with ongoing malignancies or other contraindications. The required Medicare pre-counseling is reimbursed and may be performed by a nurse specialist. Following this the patient may undergo screening at any time.

The aspirational goal is a dedicated coordinator utilizing standardized tools to identify patients so that a quick, low radiation CT is performed at an opportune moment during the hospitalization. This would greatly reduce the time to first scan and capture patients who were referred but ultimately never underwent initial screening. A Veterans Administration study found that the presence of a nodule on initial screening was predictive of adherence at year two and three, indicating that undergoing this first scan is critical¹⁰. The shift to virtual healthcare in response to the coronavirus pandemic creates a need for inpatient LCS. A decreased proportion of in-person healthcare visits necessitates bundling of services to respect

our patients time and infection risk-tolerance. A non-pulmonary hospitalization may be a patient's best or only opportunity to undergo screening. Inpatient LDCT alleviates the need for a pre-screening counseling office visit and a trip to the outpatient radiology center. The hospitalist's increasing focus on quality improvement makes them a natural leader in implementing such a project at their institution.

The prevalence of the hospitalist profession has coincided with the development of lung cancer screening programs. This life saving intervention has led to early detection and treatment of many malignancies, but there are millions of eligible Americans who have yet to be reached. Innovative approaches such as screening patients for needed preventative care while hospitalized may bridge the gap between outpatient and inpatient medicine, and with the current pandemic, inpatient hospitalizations may be a crucial opportunity to offer an LDCT safely. With the aforementioned skills, unique place in our healthcare system, and the broad population served, hospitalists can improve patients' health by recommending lung cancer screening at hospital discharge and performing LDCTs during non-pulmonary hospitalizations.

Notes

Potential conflicts of interest: The author reports no conflicts of interest in this work.

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