

Geographic Analysis of Smoking, Late-Stage Lung Cancer, and LDCT Screening in Louisiana

Authors and Affiliation

Ty-Runet Bryant, MPH; Michael D. Celestin, PhD; Bilikisu Elewonibi, PhD.
LSU Health Sciences Center School of Public Health, Community Health Sciences and Policy

Background

Lung cancer is the leading cause of cancer-related deaths in Louisiana, with smoking responsible for approximately 90% of cases. Despite the benefits of low-dose computed tomography (LDCT) screening and smoking cessation programs, screening uptake remains low among high-risk populations. This study identified Louisiana areas with high smoking prevalence and late-stage lung cancer diagnosis and examined proximity to LDCT screening facilities.

Objectives

This study examined the geographic distribution of late-stage lung cancer and smoking prevalence across Louisiana, identified spatial clusters of elevated burden, and evaluated alignment between high-risk areas and LDCT screening site availability.

Methods

Geospatial analysis of parish data from the Louisiana Tumor Registry and the American College of Radiology was conducted. Measures included late-stage lung cancer incidence, adult smoking prevalence, and LDCT screening site locations. Bivariate maps identified areas with high proportions of late-stage lung cancer diagnoses and smoking prevalence.

Results

Approximately 72% of lung cancer patients received a late-stage diagnosis (regional or distant). The rates of late-stage lung cancer incidence across Louisiana ranged from 30% to 70%, with Caldwell Parish (69.7%) and East Carroll Parish (69.9%) in Louisiana Department of Health Public Health Region Eight exhibiting the highest rates. High smoking prevalence in this region also ranged from 22.7% – 27.9%. None of the high burden areas for both late-stage lung cancer diagnosis and smoking prevalence included lung cancer screening sites. Although there are approximately 20 lung cancer screening sites statewide, 65% are concentrated in southern Louisiana.

Conclusions

Geographic disparities in late-stage lung cancer diagnosis in Louisiana reflect inequities in smoking burden and access to LDCT screening services, showing a misalignment between lung cancer risk and screening infrastructure.

Recommendations

Further assessment of lung cancer screening access in high-burden parishes is needed. Stakeholders may consider evaluating screening capacity, referral pathways, and related resources to better understand potential service gaps.

IRB

10108