



Lung Cancer Screening

2022

Milestone #1

Identify and study root causes of low lung cancer screening rates.

Section one introduces the milestone and its relationship with the broader incentive arrangement and program. Section two identifies and studies a number of root causes of low lung cancer screening rates and further analyses which ones are relevant to the Network Providers. Section three creates an action plan for addressing the root causes, and section four concludes the report and summarizes the findings.

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I. INTRODUCTION

The Louisiana Department of Health (“LDH”), as part of its contracts with each Louisiana managed care organization, authorizes additional payments to any Medicaid managed care organizations that implement an LDH initiative to increase lung cancer screening.

The Louisiana Medicaid managed care organizations that chose to work with LDH in this lung cancer screening incentive arrangement hired an extensive network of physicians, mid-level providers, clinics, and hospitals that is capable of reaching Healthy Louisiana enrollees across the State (“ACO”) to assist the Medicaid managed care organizations related to their participation in the incentive arrangement (the Medicaid managed care organizations and ACO are collectively referred to as the “MCO”). As part of this incentive arrangement, the MCO must identify and study root causes of low lung cancer screening rates. This goal has been accomplished, in part, due to the feedback from the hospitals participating in the ACO (“Network Providers”).

The following report identifies and study root causes of low lung cancer screening rates both broadly and specifically among the Network Providers.

II. IDENTIFICATION AND STUDY OF ROOT CAUSES OF LOW LUNG CANCER SCREENING RATES

Lung cancer is the leading cause of cancer mortality in the United States, accounting for more than one quarter of all cancer deaths.¹ Lung cancer screening with low-dose computed tomography (“low-dose CT”) has been shown to reduce mortality among high-risk current and former smokers by as much as 20%.² Smoking is the single largest contributor to lung cancer, occurring in 90% of lung cancer diagnoses.³ Thus, increasing lung cancer screening (in conjunction with smoking cessation initiatives) will save thousands of lives every year.

Based on an initial survey where Network Providers were asked to estimate their lung cancer screening rates, the rate of screening among the Network Providers is significantly higher than the rate in Louisiana and the United States.⁴

¹ *Screening for Lung Cancer: US Preventive Services Task Force Recommendation Statement*, JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION, Vol. 325, No. 10, March 9, 2021, pp. 962–970; for more information see Lung Cancer Screening Milestone 1.5.

² *See id.*

³ *Id.*

⁴ Fedewa, et al., *Lung Cancer Screening Rates During the COVID-19 Pandemic*, THORACIC ONCOLOGY: RESEARCH LETTERS, Vol. 161:2, pp. 586–589.

Region	Lung Cancer Screening Rate
United States	6.5%
Louisiana	3.8%
Network Providers ⁵	35.7%

Understanding the root causes for these low lung cancer screening rates is a threshold issue to developing strategies to overcome those barriers and increase screening rates. Radiologists are the healthcare professionals who conduct lung cancer screening through annual low-dose CT scans.⁶ Because of this, radiological publications are best well-suited for studying when and why patients are not screened for lung cancer in line with the recommendations. A research article entitled *Barriers to Lung Cancer Screening Engagement from the Patient and Provider Perspective* appeared in the journal *Radiology* in 2019 to examine these very issues based on recent studies.⁷ As detailed below, root causes underlying low lung cancer screening rates are divided into patient and provider barriers. The MCO has undertaken a robust survey of the Network Providers to determine which of these root causes are most applicable to Louisiana Medicaid patients to target methods designed to address them directly.⁸ In identifying the root causes for low lung cancer screening, the Network Providers were asked to identify *all* root causes, and so the percentages attributed to the root causes will exceed 100% when totaled.

A. PATIENT BARRIERS

1. Lack of Patient Awareness

Issue: Across the country, patients are simply unaware of lung cancer screening as a potential procedure to help lower the risk of lung cancer mortality.⁹ Studies conducted in Indiana, Massachusetts, Florida, Kentucky, New Mexico, and Washington showed that between 38% and 59% of screening-eligible patients did not know about lung cancer screening.¹⁰ Poorly crafted patient education materials are a limiting factor as well. Both the National Institutes of Health and the American Medical Association recommend that patient materials be readily understood by those with a third to seventh grade reading level, but only 2.5% of online patient education materials about lung cancer screening qualify.¹¹

⁵ These figures are preliminary and based on a survey of the Network Providers.

⁶ See Lung Cancer Screening Milestone 1.5 for detailed recommendations for lung cancer screening.

⁷ Wang et al., *Barriers to Lung Cancer Screening Engagement from the Patient and Provider Perspective*, *RADIOLOGY* (2019), 290(2):278-287 (hereafter *Barriers to Lung Cancer Screening*).

⁸ A copy of the Network Provider survey is attached hereto as Appendix A.

⁹ *Barriers to Lung Cancer Screening* at 279.

¹⁰ *Id.*

¹¹ *Id.*

Potential Solutions: Providers should create information materials targeted to the education level or language of intended audience.¹² These materials should also be distributed to lung cancer screening eligible patients in a variety of ways, including “community health fairs, conventional and social media, educational brochures, and mailed invitations” as well as by patient navigators.¹³

Twenty eight Network Providers (80%) indicated that lack of patient awareness was a factor contributing to their screening rates of eligible individuals being less than 100%. This was the single largest factor identified by the Network Providers.

2. Cost/Lack of Insurance Coverage

Issue: Medicare, Medicaid, and commercial insurance cover the cost of lung cancer screening, but if patients do not know or believe that the procedure is covered, they will often opt out.¹⁴ And even though the procedure is covered, patients are also concerned about related costs like transportation and missing work.¹⁵ Finally, broad coverage of the procedure does not help the millions of uninsured across the United States, for whom the cost of screening is prohibitively high.¹⁶

Potential Solutions: The answer to the lack of information is again education. Patients must be informed about coverage to break down the cost barrier, and the education avenues recommended for lack of patient awareness should be used here as well.¹⁷ Providers can mitigate the related cost of missed work by offering extended office hours and inform patients of Medicaid transportation options.¹⁸

Twenty seven Network Providers (77%) responded that patient concerns regarding cost and insurance coverage contributed to suboptimal screening rates, and it was the second largest factor overall.

3. Fear of Cancer Diagnosis, Stigma, or Radiation

Issue: While somewhat counterintuitive, patients sometimes avoid screening due to fear of learning they have cancer.¹⁹ Many believe they will not benefit from lung cancer screening because they have smoked for too long, despite being precisely the category of patients who

¹² *Id.*

¹³ *Id.*

¹⁴ *Id.*

¹⁵ *Id.*

¹⁶ *Id.*

¹⁷ *Id.*

¹⁸ *Id.* at 280.

¹⁹ *Id.*

would benefit most.²⁰ And large portions of the smoking population believe that cancer treatments are actually worse than lung cancer.²¹ Patients who smoke also feel a unique stigma that their diagnosis is their own fault, with some reporting that they feel they are being treated unfairly by medical staff.²² Finally, some patients eligible for lung cancer screening (*i.e.*, older patients with a heavy smoking history) opt out because they are concerned that the radiation from screening will cause lung cancer.²³

Potential Solutions: Education focusing on the positive sides of lung cancer screening with messages of hope and family, testimony from survivors, emphasis on health and preservation are more effective than those utilizing “scare tactics.”²⁴ Patients are more likely to respond to lung cancer screening invitations from their primary care physicians than from screening centers, due to inherent trust associated with their regular doctors and wariness of profit motive for those providing the service.²⁵ And clear and honest weighing of risks of screening compared with non-screening will build credibility and dispel misinformation.²⁶ A focus on how lung cancer screening has improved over time would contextualize the risks and reduce patient hesitancy.²⁷

Fourteen Network Providers (40%) estimated that patients opt out of lung cancer screening due to the stigma of smoking and another two (6%) regarded fear of radiation as a contributing factor as well.

4. Lack of Access

Issue: As distance to a lung cancer screening facility increases, patient access decreases.²⁸ But distance is not the only indicator of lack of access or predictor of missed appointments. Cost of travel and even cost of hospital parking can prevent patients from accessing screening.²⁹ Competing responsibilities, such as those of caregiving to young children, also restricts access.³⁰ Patients whose primary language is not English or Spanish miss appointments more frequently.³¹ Low reimbursement rates from Medicare and Medicaid may also contribute to providers not offering lung cancer screening.³²

²⁰ *Id.*

²¹ *Id.*

²² *Id.*

²³ *Id.*

²⁴ *Id.*

²⁵ *Id.*

²⁶ *Id.* at 280–281.

²⁷ *See id.* at 281.

²⁸ *Id.*

²⁹ *Id.*

³⁰ *Id.*

³¹ *Id.*

³² *Id.*

Potential Solutions: To the extent transportation is the primary access barrier, Medicaid transportation offers a ready solution. Mobile lung cancer screening units are another option.³³ Expanded hours or walk-in availability would help reduce strain on those with competing duties.³⁴ And pre-appointment reminders in the patient’s preferred language could reduce missed appointments.³⁵ Low reimbursement rates are an area for advocacy as providers seek to increase lung cancer screening, which may lower the public cost burden in the long run compared to later-stage diagnoses.³⁶

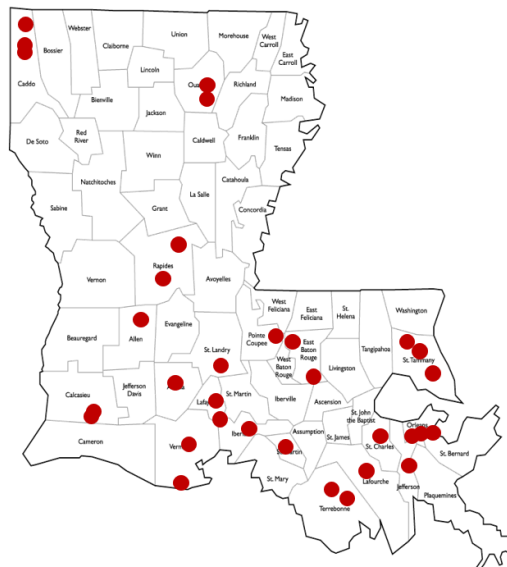
B. PROVIDER BARRIERS

1. Lack of Equipment, Facilities, or Qualified Personnel

Issue: Some providers do not have the necessary equipment, facilities or personnel required to conduct low-dose CT scans in line with recommended lung cancer screening guidelines.

Potential Solutions: Unfortunately, the capital expenditures required to provide these services are high. And with Medicare and Medicaid reimbursement of these services low, the incentives do not align for providers who do not already have the resources available at this time.

Lack of available screening equipment, facilities, or qualified personnel contributed to lower lung cancer screening rates according to three Network Providers (9%). Below is a map showing the location of the Network Providers’ lung cancer screening facilities.



³³ *Id.*

³⁴ *Id.*

³⁵ *Id.*

³⁶ *See id.*

2. Clinician Knowledge Gaps

Issue: Clinicians are sometimes (1) unfamiliar with screening eligibility guidelines, (2) skeptical of lung cancer screening efficacy, or (3) unfamiliar with follow-up recommendations for positive screenings.³⁷ Because primary care physicians are not specialized in radiological services, their familiarity with lung cancer screening recommendations is low; studies have indicated that up to half of primary care physicians cannot correctly identify the eligibility criteria.³⁸ Providers may also be skeptical regarding the evidence of low-dose CT scans on patient outcomes, with more than 40% of providers in one study not considering the evidence strong enough and requiring additional research and trials.³⁹ And with high false-positive rates and different procedures required depending on the results of low-dose CT scans, nearly 70% of primary care physicians and pulmonologists needed at least some additional information to make recommendations and 50% were unsure of what to do at all.⁴⁰

Potential Solutions: Addressing these knowledge gaps requires further education of providers on each area of unfamiliarity. Webinars or other easy-to-access education materials are effective at increasing the knowledge base of providers and have been shown to increase their likelihood to recommend lung cancer screening.⁴¹

Twenty three Network Providers (66%) indicated that their lung cancer screening rates were lower due to being unfamiliar with screening recommendations through lack of protocols, guidelines, or education. This root cause was the third highest of those identified by the Network Providers. An additional thirteen Network Providers (37%) identified as root causes of lower screening rates the following: (1) provider unfamiliarity with follow-up recommendations following a positive screening and (2) provider skepticism regarding screening effectiveness. These were significant factors, despite only ranking seventh among the root causes studied.

3. Difficulty Identifying Eligible Patients

Issue: Reminders for physicians based on an electronic medical record (“EMR”) for each patient is an effective way to increase participation in lung cancer screening. But smoking history tends to be poorly documented in provider EMRs, making it difficult to assess whether a patient is eligible for a lung cancer screening.⁴² Studies have indicated that little more than half of

³⁷ *Id.* at 281–284.

³⁸ *Id.* at 281.

³⁹ *Id.* at 283–284.

⁴⁰ *Id.* at 283.

⁴¹ *Id.* at 282; *see also id.* at 283–284.

⁴² *Id.* at 282.

patients' EMRs contain smoking history information, and of those only one third are considered accurate.⁴³

Potential Solutions: Questionnaires designed by knowledgeable radiology practices have been shown to be an effective way to document smoking histories, identify eligible patients, and connect those patients with providers who can conduct lung cancer screening.⁴⁴

Difficulty identifying patients eligible for lung cancer screening under current recommendations was a significant root cause for nineteen Network Providers (54%), making this the fourth most impactful root cause.

4. Difficulty conducting shared decision-making visits

Issue: Prior to low-dose CT screening for lung cancer, CMS requires a counseling and shared decision-making visit with the patient as recommended by the screening guidelines, allowing patients to make informed decisions about the risks and benefits of screening.⁴⁵ But providers are not always experienced in conducting these types of visits, leading to ineffective visits that leave the providers and patients feeling as if they have merely 'checked a box' rather than having engaged in serious deliberation.⁴⁶ Low reimbursement rates set by CMS also do not adequately incentivize deeper focus on these visits.⁴⁷

Potential Solutions: Additional provider education regarding the importance (from both compliance and patient outcome perspectives) and best practices are needed.⁴⁸ Numerous resources are available online for free offering providers insights into how to best approach these important shared decision-making visits.

Fifteen Network Providers (43%) identified difficulty in conducting shared decision-making discussion with patients as a root cause of lower lung cancer screening rates. This was the fifth most important root cause overall.

C. CHART OF BARRIERS RELEVANT TO THE NETWORK PROVIDERS

Below is a chart detailing which root causes are most relevant to impacting low lung cancer screening rates among the Network Providers.

⁴³ *Id.*

⁴⁴ *Id.*

⁴⁵ *Id.*

⁴⁶ *Id.*

⁴⁷ *Id.*

⁴⁸ *Id.*

Ranking	Root Cause	Percentage of Network Providers Identifying Root Cause
1	Lack of patient awareness	80%
2	Patient cost concerns and insurance coverage	77%
3	Provider unfamiliarity with screening recommendations through lack of protocols, guidelines, or education	66%
4	Difficulty in identifying eligible patients	54%
5	Difficulty in conducting shared decision-making discussion with patients	43%
6	Patients opt out due to stigma	40%
7	Provider unfamiliarity with follow-up recommendations following positive screening	37%
7	Provider skepticism regarding screening effectiveness	37%
9	Lack of screening equipment, facilities, or qualified personnel	9%
10	Patients opt out due to radiation concerns	6%

III. ACTION PLAN FOR IMPACTING ROOT CAUSES

LDH created a set of milestones for the lung cancer screening incentive arrangement that will address the above root causes. For instance, Milestone 1.2 requires the MCO to conduct education and training of Network Providers regarding low lung cancer screening rates, which will decrease provider knowledge gaps. Milestones 1.3 and 1.4 work to educate patients with carefully crafted materials regarding lung cancer screening and risk factors leading to screening eligibility, increasing awareness and correcting misinformation on the patient side. And Milestones 1.6 and 1.7 work in concert with the direct outreach efforts to track lung cancer screening data in a uniform reporting template and address any implementation issues encountered by the Network Providers. Together, these milestones form a complete action plan for addressing root causes in the first year of this incentive arrangement. In subsequent years, the action plan will be modified to account for additional research and experience gained.

IV. CONCLUSION

The MCO identified and studied the root causes underlying low lung cancer screening rates and will use the analysis and conclusions in this report to better inform its strategy for improving lung cancer screening rates among the Network Providers. In particular, these findings support efforts to increase education of both the patient and the provider regarding the availability,

reliability, and effectiveness of annual low-dose CT scans for those meeting the eligibility guidelines.

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APPENDIX A: NETWORK PROVIDER SURVEY

Introduction

LDH approved two new incentive arrangements to begin in 2022: lung cancer screening and tobacco cessation. Because of their close relationship, this survey covers both projects, and your responses will be used to fulfill the reporting requirements for 2022 milestones for both projects. Responses to the survey and additional analyses done for project milestones will inform activities and other Network Provider participation requirements in subsequent years, so please answer each question as accurately and completely as possible.

Questions

Lung Cancer Screening Rates. Current recommendations from the US Preventive Services Task Force suggest annual lung cancer screening with low-dose computed tomography (LDCT) in adults aged 50 to 80 years who have a 20 pack-year smoking history and currently smoke or have quit within the past 15 years. A pack-year is a unit to help measure how much a person has smoked in their lifetime. Excluded from screening are those experiencing health problems that limit life expectancy or limit the ability to undergo lung surgery. For those eligible for screening, the decision to undertake screening should involve a shared decision-making discussion of its potential benefits, limitations, and harms.

1. Please indicate the rate at which you screen adults who meet the recommendation parameters for lung cancer screening.
 - a. Never (0%)
 - b. Sometimes (25%)
 - c. Half of the time (50%)
 - d. Most of the time (75%)
 - e. Always (100%)

2. If your lung cancer screening rate is less than always, why? (Please mark all that apply).
 - a. Lack of patient awareness
 - b. Patient cost concerns and insurance coverage
 - c. Patients opt out due to stigma
 - d. Patients opt out due to radiation concerns
 - e. Lack of screening equipment, facilities, or qualified personnel
 - f. Unfamiliarity with screening recommendations through lack of protocols, guidelines, or education
 - g. Difficulty in identifying eligible patients
 - h. Difficulty in conducting shared decision-making visits
 - i. Unfamiliarity with follow-up recommendations following positive screening
 - j. Provider skepticism regarding screening effectiveness
 - k. Other

Screening Outside of Recommendations. Providers may utilize lung cancer screening protocols or methods outside of the US Preventive Services Task Force recommendations.

1. Please describe any differences between your protocols and the recommendations.
2. Please describe any lung cancer screening methods you utilize that are not included in the recommendations.

Current Tobacco Cessation Efforts in Inpatient and ED Settings. A variety of tobacco cessation treatments are in use in the United States today. When patients are seen in the inpatient or ED settings, providers have the opportunity to implement these treatments. The first step to treatment, however, is identifying patients who use tobacco products.

3. Please indicate the rate at which you screen for patients for tobacco use.
 - a. Never (0%)
 - b. Sometimes (25%)
 - c. Half of the time (50%)
 - d. Most of the time (75%)
 - e. Always (100%)
4. If your tobacco use screening rate is less than always, why? (Please mark all that apply).
 - a. Patients refuse to respond
 - b. Provider lacks protocols, guidelines, or education on tobacco use screening
 - c. Clinical staff does not follow protocols or guidelines
 - d. Other
5. Please list the tobacco cessation methods you provide to patients.
6. Please indicate the rate at which you provide tobacco cessation counseling and initiate pharmacotherapy (e.g., nicotine replacement therapy) in the inpatient setting to those who screened positive for tobacco use.
 - a. Never (0%)
 - b. Sometimes (25%)
 - c. Half of the time (50%)
 - d. Most of the time (75%)
 - e. Always (100%)
7. If your tobacco cessation counseling and treatment rate in the inpatient setting is less than always, why? (Please mark all that apply).
 - a. Patient refuses counseling or treatment
 - b. Insufficient provider training regarding impact of tobacco use
 - c. Provider skepticism regarding effectiveness of tobacco cessation treatments
 - d. Insufficient support from clinical staff (e.g., allowing smoke breaks between treatment sessions, or prevalence of smoking among clinical staff)
 - e. Insufficient reimbursement of tobacco cessation treatment
 - f. Other

8. Please indicate the rate at which you refer patients who received tobacco cessation counseling and pharmacotherapy to community providers upon discharge from the inpatient setting.
- Never (0%)
 - Sometimes (25%)
 - Half of the time (50%)
 - Most of the time (75%)
 - Always (100%)
9. Please indicate the rate at which you provide tobacco cessation counseling and initiate pharmacotherapy (e.g., nicotine replacement therapy) in the ED setting to those who screened positive for tobacco use.
- Never (0%)
 - Sometimes (25%)
 - Half of the time (50%)
 - Most of the time (75%)
 - Always (100%)
10. If your tobacco cessation counseling and treatment rate in the ED setting is less than always, why? (Please mark all that apply).
- Patient refuses counseling or treatment
 - Insufficient provider training regarding impact of tobacco use
 - Provider skepticism regarding effectiveness of tobacco cessation treatments
 - Insufficient support from clinical staff (e.g., allowing smoke breaks between treatment sessions, or prevalence of smoking among clinical staff)
 - Insufficient reimbursement of tobacco cessation treatment
 - Other
11. Please indicate the rate at which you refer patients who received tobacco cessation counseling and pharmacotherapy to community providers upon discharge from the ED setting.
- Never (0%)
 - Sometimes (25%)
 - Half of the time (50%)
 - Most of the time (75%)
 - Always (100%)
12. Please provide any other relevant information regarding lung cancer screening or tobacco cessation not discussed in the preceding questions.