An Implementation Guide for Quitlines

(Interim Guide)*

PROJECT CONNECT

Lung Cancer Screening Support

Interim Guide note
Final data on cost will be available by the end of 2022, at which time this guide will be updated and finalized.

Executive Summary

Lung cancer remains the number one cancer-related cause of death among both men and women in the United States. Lung cancer screening has the potential to save 12,000 lives annually in the U.S. However, due to low rates of screening many persons who could benefit from lung cancer screening do not receive this service.

Quitlines can play a role in decreasing the number of deaths from lung cancer by educating quitline participants about lung cancer screening. More than half of all U.S. quitline participants may be eligible for lung cancer screening.

Quitline funders and service providers have competing priorities and limited time, however, quitlines can raise awareness about lung cancer screening among quitline participants during intake or counseling with minimal start-up and ongoing costs (Chapter 5 reviews the costs associated integrating lung cancer screening education). On average, adding education on lung cancer screening to quitline intake takes no more than 2 minutes Quitline service providers can:

- Identify potentially eligible quitline participants based upon age (50 to 80 years) and smoking pack-year history (20 pack-years)
- Verbally refer them to lungscreen.health
- Text and/or email quitline participants the link to lungscreen.health
- Embed lungscreen.health educational materials on quitline webpage

Project CONNECT was an implementation project that involved partnerships between The University of Texas MD Anderson Cancer Center (MD Anderson), North American Quitline Consortium (NAQC), quitline service providers, and quitline funders to increase the awareness of lung cancer screening with low-dose computed tomography among quitline participants. The project had an active 6-month implementation period for each state quitline (7 state quitlines participated) with monthly check-ins between members from NAQC, services providers, state funders, and MD Anderson.

Over the course of the project, quitline service providers tested multiple methods for disseminating educational materials (verbal referral, text, email, mail, and web) to engage quitline participants in learning about lung cancer screening and to encourage them to take action to obtain a lung cancer screen with low-dose computed tomography. Although verbal referral reached the most potentially eligible quitline participants, engagement with the educational materials was low. Adding text or email to verbal referral resulted in improved engagement with the educational materials. Placing educational materials on the state quitline's website resulted in better engagement. However, we do not know how many individuals were potentially eligible quitline participants.

Many quitline participants have lower incomes, behavioral health conditions, and are members of a priority population.

Quitline funders could address health equity by partnering with other organizations and funders to ensure that all individuals who may be eligible for lung cancer screening will have access to screening and affordable treatment options, regardless of insurance.

This implementation guide is designed to help quitline funders and service providers learn what it takes to educate quitline participants about lung cancer screening.

Implementation Guide Table of Contents

Chapter 1. Purpose of the Implementation Guide/Intended Audience

Since 2010, quitlines have begun to develop a more integrated approach to offering services and referrals for health conditions that are prevalent among people who use tobacco. In this way quitlines play an important role in more fully addressing critical public health issues relevant to individuals who smoke (both currently and formerly) such as diabetes and behavioral health conditions. By offering education on lung cancer screening, quitlines could better serve the health needs of their participants.

Quitlines can play a role in increasing awareness of lung cancer screening because they serve a large population of people who have a long history of tobacco use and are eligible for lung cancer screening. In fiscal year 2020, state quitlines reported 785,673 calls and enrolled 284,917 participants in quitline services across the US (NAQC annual survey, 2020). Among people who use state quitlines 52% (148,610) were between the ages of 50-80 years, meeting the USPSTF eligibility criteria on age for lung cancer screening.

This implementation guide is designed to help quitline funders and service providers learn what it takes to integrate education on lung cancer screening into existing quitline services. Improving lung health is a key mission for quitlines, and quitlines are in the perfect position to pair both primary and secondary prevention to address lung cancer. Quitline service providers can do this by raising awareness of lung cancer screening through:

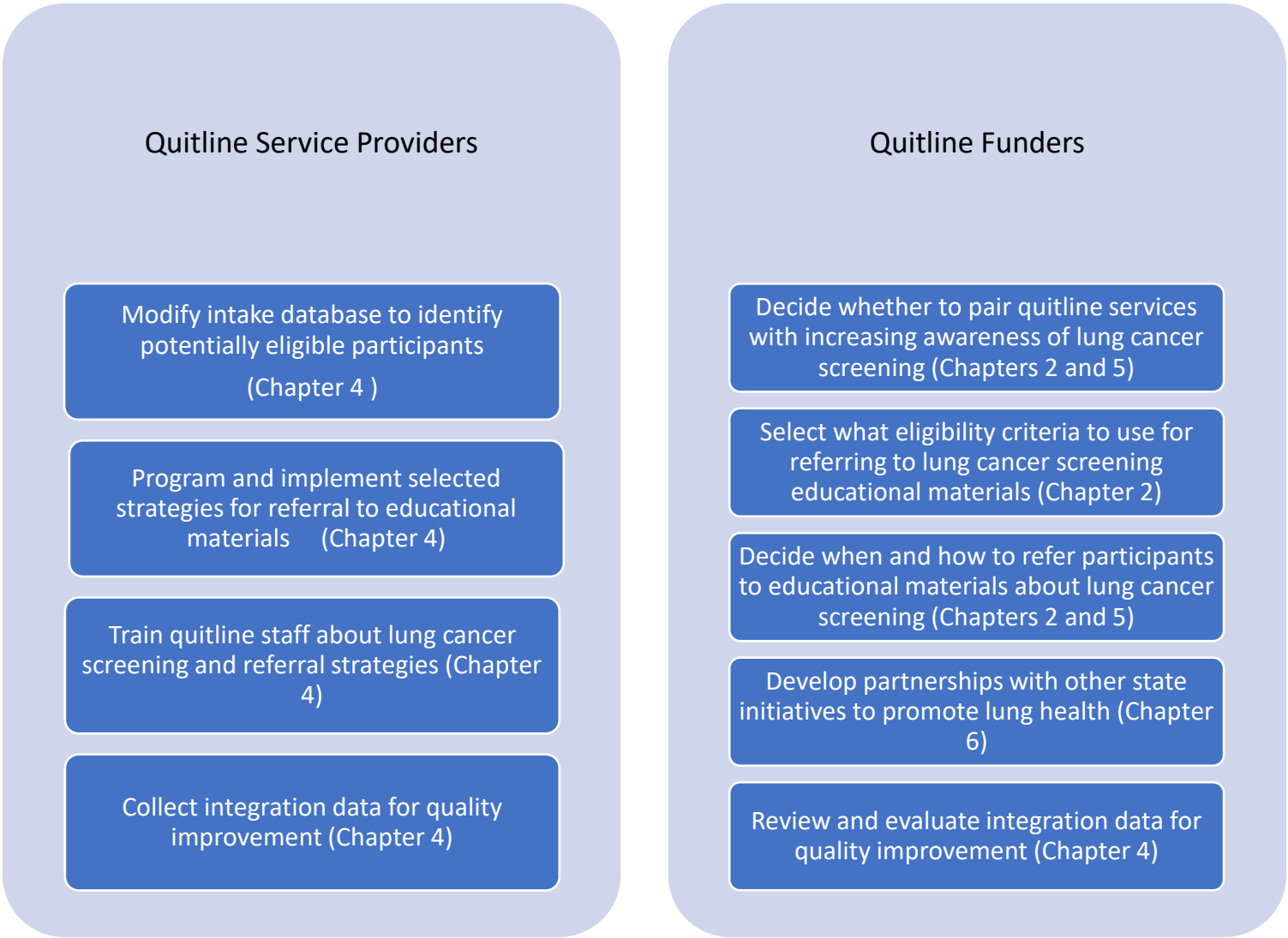
- Identifying potentially eligible quitline participants based on age (50 to 80 years) and smoking pack-years history (20 pack-years)
- Directing quitline participants to educational materials about lung cancer screening

How to Use this Guide

- Background on lung cancer screening is presented in Chapter 2
- Research leading to Project CONNECT is presented in Chapter 3
- Steps to integrate education about lung cancer screening is outlined in Chapter 4
- Costs associated with implementation are described in Chapter 5

Figure 1 shows the different roles funders and service providers can play to educate their participants about lung cancer screening. With recent changes to lung cancer screening coverage from the Centers for Medicare & Medicaid Services, service providers may be able to take a more active role in providing counseling about smoking cessation and shared decision making about lung cancer screening. Additional training of quitline staff would be needed to provide this increased level of service and was not the focus of the current project.

Figure 1. Roles of quitline service providers and quitline funders for integrating lung cancer screening education in quitlines.



Chapter 2. Building the Case for Integrating Education for Lung Cancer Screening in Quitlines

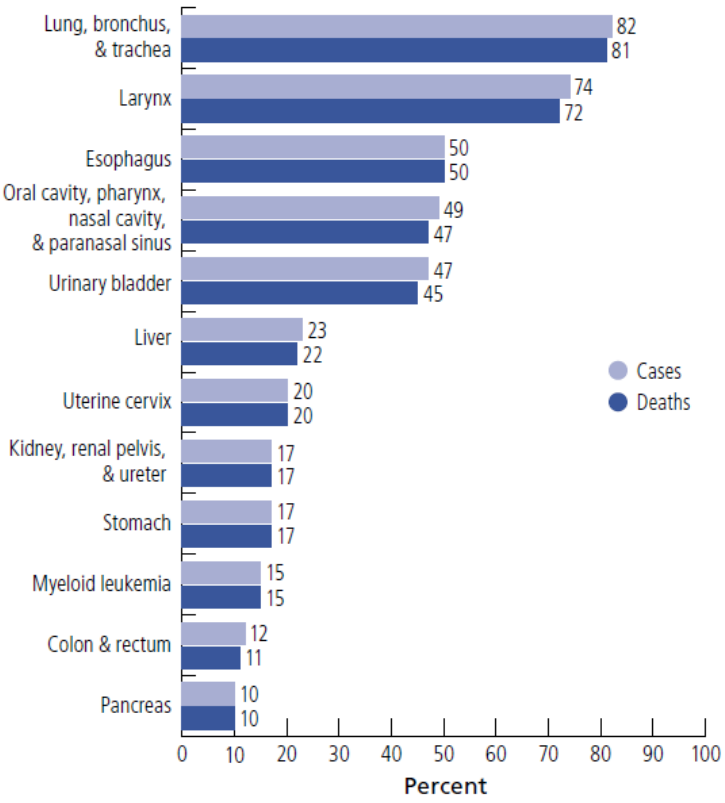
Facts about Lung Cancer

Lung cancer is the second most common cancer diagnosed in the United States behind skin cancer. In 2022, the American Cancer Society estimated that 117,910 males and 118,830 females would be diagnosed with lung cancer.[2] It is the leading cause of cancer-related deaths by far, with over 130,000 deaths expected in 2022.[2]

Lung cancer is an aggressive cancer, with only 22% of patients surviving at least 5 years after diagnosis. When detected at an early stage before the cancer has spread, the 5-year survival rate increases to 60%, highlighting the importance of early detection.[2]

Overall, 19% of all cancers are caused by smoking and are therefore preventable.[2] Smoking is the leading cause of lung cancer. Nearly 85% of lung cancers are attributed to smoking[2] (see Figure 2).

Figure 2. Proportion of cancer cases and deaths attributable to cigarette smoking in adults 30 years and older, US, 2014[1].



Research to Support Screening for Lung Cancer: The National Lung Cancer Screening Trial (NLST)

The National Lung Screening Trial (NLST) was conducted to compare the impact of screening with low-dose computed tomography (LDCT) versus chest x-ray on lung cancer mortality. The trial enrolled over 50,000 persons and randomized them to receive 3 consecutive annual LDCT scans or chest x-rays, and then followed them for an average of 6.5 years. Eligible participants were 55 to 74 years of age, had at least a 30 pack-year smoking history, and currently smoked or had quit within the past 15 years. Its main results, published in 2011[3], **showed that screening for lung cancer can reduce deaths from lung cancer.** The trial found that those who received LDCT scans were 20% less likely to die from lung cancer than those who received chest x-rays.

U.S. Lung Cancer Screening Policy and Recommendations

While lung cancer screening can save lives, it is also associated with potential harms, therefore, a person's preferences about the tradeoffs between benefits and harms is important when deciding about lung cancer screening. Potential harms include false positive results that can lead to additional imaging and harms from diagnostic testing (e.g., lung biopsies), radiation exposure, diagnosis of lung cancer that would not have caused harm to the patient (i.e., overdiagnosis), and anxiety associated with screening.

Based largely on the NLST's findings, the United States Preventive Services Task Force (USPSTF) published recommendations on screening for lung cancer with LDCT (see Box 1) in 2014.[4] In March 2021, the USPSTF updated these recommendations.[5] The USPSTF retained a Grade B recommendation for lung cancer screening with LDCT.

In addition, changes were made to the eligibility criteria: the lower age limit for screening was changed from 55 to 50 years, and the smoking history threshold was dropped from 30 pack-years to 20 pack-years (see Figure 3). These changes in eligibility criteria were meant to decrease racial and ethnic disparities in eligibility from the previous criteria.

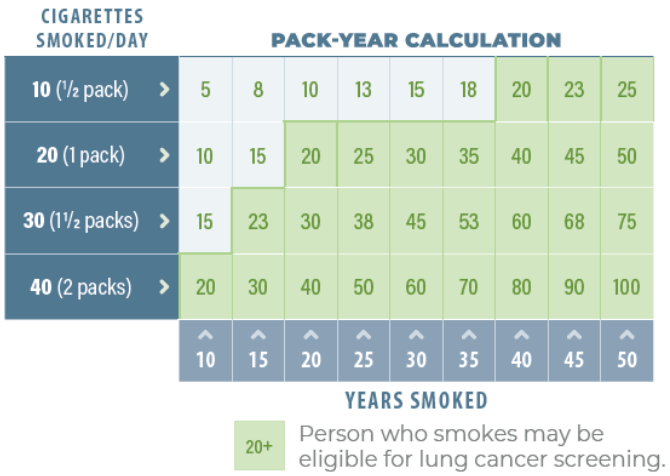
Broadening eligibility criteria for lung cancer screening has dramatic health and racial equity impacts on the number of adults eligible for screening.[6] It increases the number of:

- ☐ eligible individuals by 87%
- ☐ women by 96%
- ☐ non-Hispanic Black individuals by 106%
- ☐ Asian individuals by 61%

Box 1. Low-Dose Computed Tomography (LDCT)

- ☐ Lung cancer screening is performed using a CT scanner, a doughnut shaped x-ray machine. The dose is lower than a typical scan used to help diagnose lung cancer.
- ☐ The scan only takes a few seconds, contrast is not used, and there is no discomfort.
- ☐ The amount of radiation from a LDCT scan is more than a standard chest x-ray but less than the background radiation someone receives in about 1 year.

Figure 3. Pack years are determined dividing the number of cigarettes smoked per day by 20 (number of cigarettes in one pack) then multiplying by the number of years smoked.



A Grade B recommendation from USPSTF requires health insurers to cover screening for all eligible adults without co-pay (see Figure 4[7]). This requirement comes from the Affordable Care Act[8] and applies to all Grade A and B services. It is important to note that while there are no co-pays for the screening service, additional diagnostic services and treatment are subject to health insurance. In comparison, screening for

Figure 4. United States Preventive Services Task Force. Grading Definitions

Grade	Definition
A	The USPSTF recommends the service. There is high certainty that the net benefit is substantial.
B	The USPSTF recommends the service. There is high certainty that the net benefit is moderate or there is moderate certainty that the net benefit is moderate to substantial.
C	The USPSTF recommends selectively offering or providing this service to individual patients based on professional judgment and patient preferences. There is at least moderate certainty that the net benefit is small.
D	The USPSTF recommends against the service. There is moderate or high certainty that the service has no net benefit or that the harms outweigh the benefits.
I Statement	The USPSTF concludes that the current evidence is insufficient to assess the balance of benefits and harms of the service. Evidence is lacking, of poor quality, or conflicting, and the balance of benefits and harms cannot be determined.

colorectal cancer in adults 50 to 75 years old received a Grade A[9] and biennial breast mammography for adults 50 to 74 years old received a Grade B from the USPSTF[10].

Lung cancer screening may also serve as a teachable moment for smoking cessation. Studies on lung cancer screening have shown that cessation motivation and cessation rates were higher for people who smoke as this population tends to have a greater awareness of lung cancer. [11,12]

The Centers for Medicare & Medicaid Services (CMS) released an updated national coverage determination for lung cancer screening on February 10, 2022.[13] A comparison of the eligibility criteria required by USPSTF and CMS is provided in Table 1. Of note, CMS only covers the cost of lung cancer screening up to age 77. The benefits of lung cancer screening in persons over age 77 or 80 has not been established. There are currently Medicaid fee-for-service programs that cover lung cancer screening in 40 states, however these programs vary in eligibility.[14]

Table 1. Lung cancer screening eligibility criteria

Criterion	USPSTF March 19, 2021	CMS February 10, 2022
Age	50 – 80	50 – 77
Signs/Symptoms	Asymptomatic (no signs or symptoms of lung cancer)	Asymptomatic (no signs or symptoms of lung cancer)
Pack-year smoking history	At least 20 pack-years	At least 20 pack-years
Smoking status	Currently smoke or quit within last 15 years	Currently smoke or quit within last 15 years

CMS requires a counseling and shared decision-making visit before a beneficiary's first lung cancer screening with LDCT and this visit must be documented in the medical record. Elements of the visit are described in Box 2. Beneficiaries are expected to receive counseling about cigarette cessation and abstinence, and they should receive information about tobacco cessation interventions. There is no restriction on the kind of providers who can conduct the counseling and shared decision-making visit.

Box 2. Final National Coverage Determination (CMS)

Before the beneficiary's first lung cancer LDCT screening, the beneficiary must receive a counseling and a shared decision-making visit that meets all the following criteria, and these criteria must be appropriately documented in the beneficiary's medical records:

- Determination of beneficiary eligibility;
- Shared decision-making, including the use of one or more decision aids (lungscreen.health includes a video-based and paper-based decision aid);
- Counseling on the importance of adherence to annual lung cancer LDCT screening, impact of comorbidities and ability or willingness to undergo diagnosis and treatment; and
- Counseling on the importance of maintaining cigarette smoking abstinence if the person formerly smoked; or the importance of smoking cessation if the person currently smokes and, if appropriate, furnishing of information about tobacco cessation interventions.

Lung Cancer Screening Uptake Remains Low

Lung cancer screening has the potential to save 12,000 lives annually in the U.S.[15] Although coverage for the cost of lung cancer screening is excellent among private and public health plans, screening rates have remained low, at about 10% of the eligible population[4]. This translates to a missed opportunity to save lives through early diagnosis of lung cancer.

Smoking Cessation Interventions and Lung Cancer Screening *(Table 2)*

- Smoking cessation is the most powerful tool we have to reduce the risk of developing and dying from lung cancer. Although the benefits of not smoking far outweigh the benefits of lung cancer screening, early detection with LDCT screening saves lives.
- Lung cancer screening can provide persons who smoke with an additional, powerful strategy for reducing their risk of lung cancer.
- Lung cancer screening is not a replacement for smoking cessation.

Table 2. Lung cancer screening complements smoking cessation

	Primary Prevention [Smoking cessation]	**Secondary Prevention [Annual screening with LDCT]**
Description	Prevent lung cancer from occurring	Identify lung cancer early when the chance for cure is greater
Potential impact	• Reduce impact of primary risk factor for lung cancer • Broad impact on longevity and quality of life	• Reduce lung cancer deaths, especially among persons diagnosed with early-stage lung cancer

What can quitlines do to improve lung cancer screening awareness and uptake?

Although the most important message for quitline participants is to stop using tobacco, quitlines can play an essential role in promoting lung cancer screening through a variety of activities. Suggested activities include:

- Identify quitline participants who meet eligibility for lung cancer screening
  - 50-80 years of age (CMS only covers Lung Cancer Screening through age 77)
  - 20+ pack-year smoking history
- Disseminate materials to help participants make decisions about lung cancer screening
  - Refer participants to lungscreen.health, a Project CONNECT resource website
  - Add links to the decision aids about lung cancer screening to quitline websites
  - Use email, text, and regular mail to distribute materials
- Train intake personnel and counselors to answer participants' questions about lung cancer screening
  - Encourage participants to talk with their health care provider about screening
  - Emphasize the importance of being screened every year
  - Be ready to address participants' questions about screening or refer them to their health care provider

In addition to these activities, quitline funders are uniquely positioned to expand lung cancer screening through partnership activities such as:

- Making the decision to integrate lung cancer screening into quitline services and express this decision through the contract with the quitline service provider.
- Utilizing state surveillance system data to map smoking burden and LCS screening resources to prioritize promotion, outreach and systems change activities and identify network gaps.
- Developing or expanding external partnerships for promotion and referral between the quitline and health care providers, health care centers and systems, lung cancer screening facilities and other organizations that serve adults who smoke.
- Leveraging internal partnerships with chronic disease and cancer programs aimed at expanding lung cancer screening promotion and ensuring access to screening services, especially among people with lower incomes and those living in rural areas.
- Informing the public and/or eligible participants of the potential for Medicaid or Medicare coverage for the lung cancer screening. This may reduce barriers to follow through with the health care visit and screening.

Chapter 3. Background and Rationale

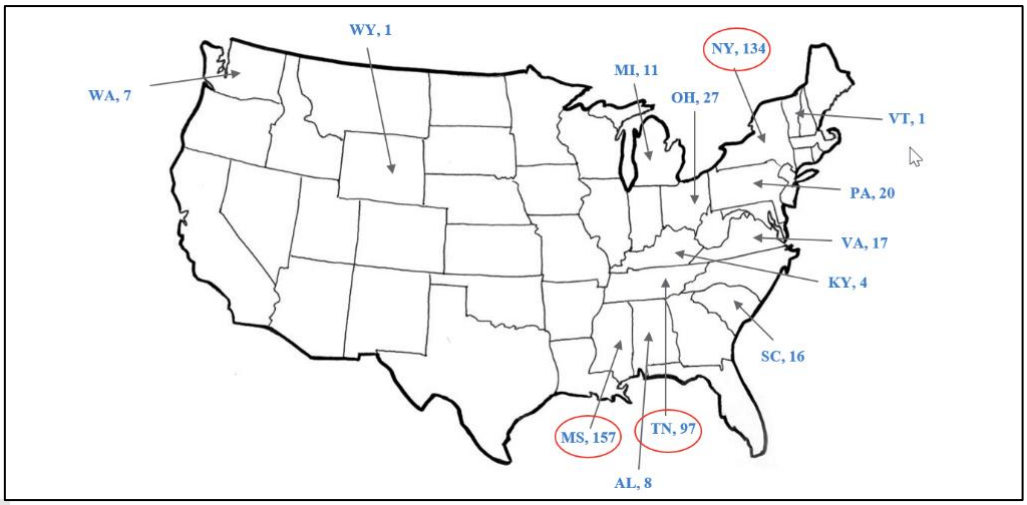
The background and rationale for implementing lung cancer screening education within state quitlines has been established by the two studies described in this chapter.

Promoting INFORMed Decisions about Lung Cancer Screening: Project INFORM

Project INFORM was a multi-state, randomized trial testing a patient decision aid video "Lung Cancer Screening: Is it right for me?" developed and updated by The University of Texas MD Anderson Cancer Center. The 13 state quitlines that participated in the study are shown in the figure below (see Figure 5).

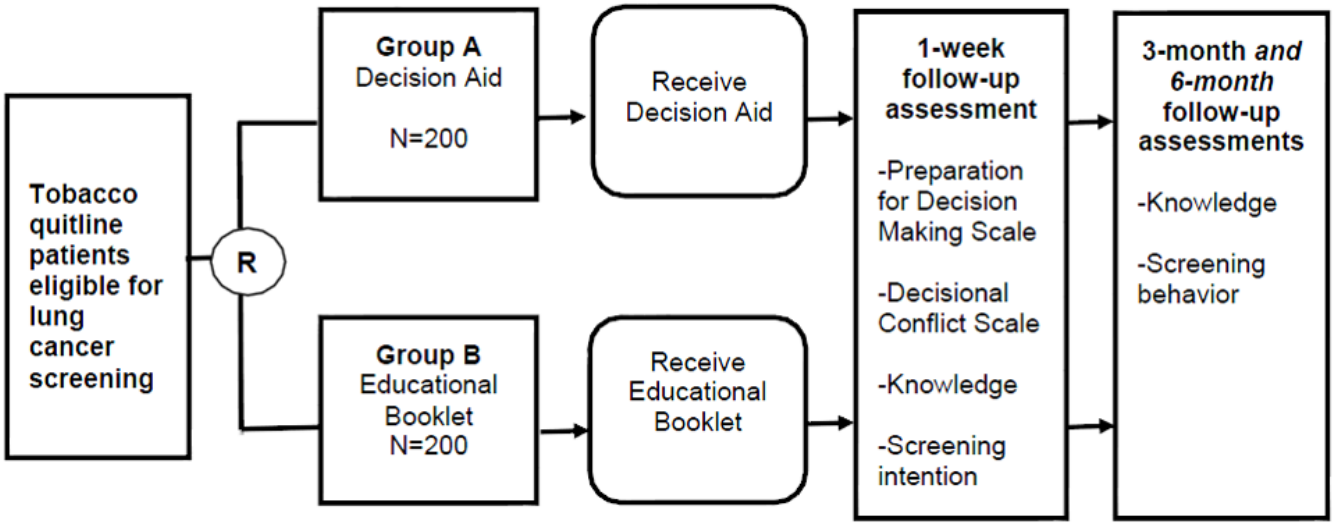
By focusing on individuals already engaged in quitline services, the project combined the primary preventive strategy for lowering the risk of lung cancer with annual screening with low-dose computed tomography, the only proven approach for early detection of lung cancer.

Figure 5. Project INFORM Enrollment by state (N = 516 quitline participants).



The study protocol was published in *Contemporary Clinical Trials*[16] and can be found here. The main findings appeared in *JAMA Network Open* in 2020.[17] The design of the study is shown below (see Figure 6). After randomization, participants received either the patient decision aid video or standard educational materials. Participants were followed for 6 months after they received their intervention materials.

Figure 6. Project INFORM study schema.



Characteristics of the 516 study participants are given in Table 3 table. The average age was 61.7 years, with a range from 55 to 77. Over 60% were female and 44% had a high school education or less. Compared to Fiscal Year 2018 data from state quitlines, fewer participants in Project INFORM reported being uninsured (8% vs 26%), fewer identified as being Black (15% vs 27%), and fewer participants identified as being Hispanic (3% vs 15%).[18]

Main findings: Compared to the standard education group, as a result of receiving the patient decision aid, participants:

- Had greater knowledge of lung cancer screening benefits and risks at each follow-up period.
- Were better prepared to make a screening decision.
- Were more assured about lung cancer screening decision.
- Were clearer about what mattered to them in making a decision.

Table 3. Characteristics of Project INFORM Participants[a]

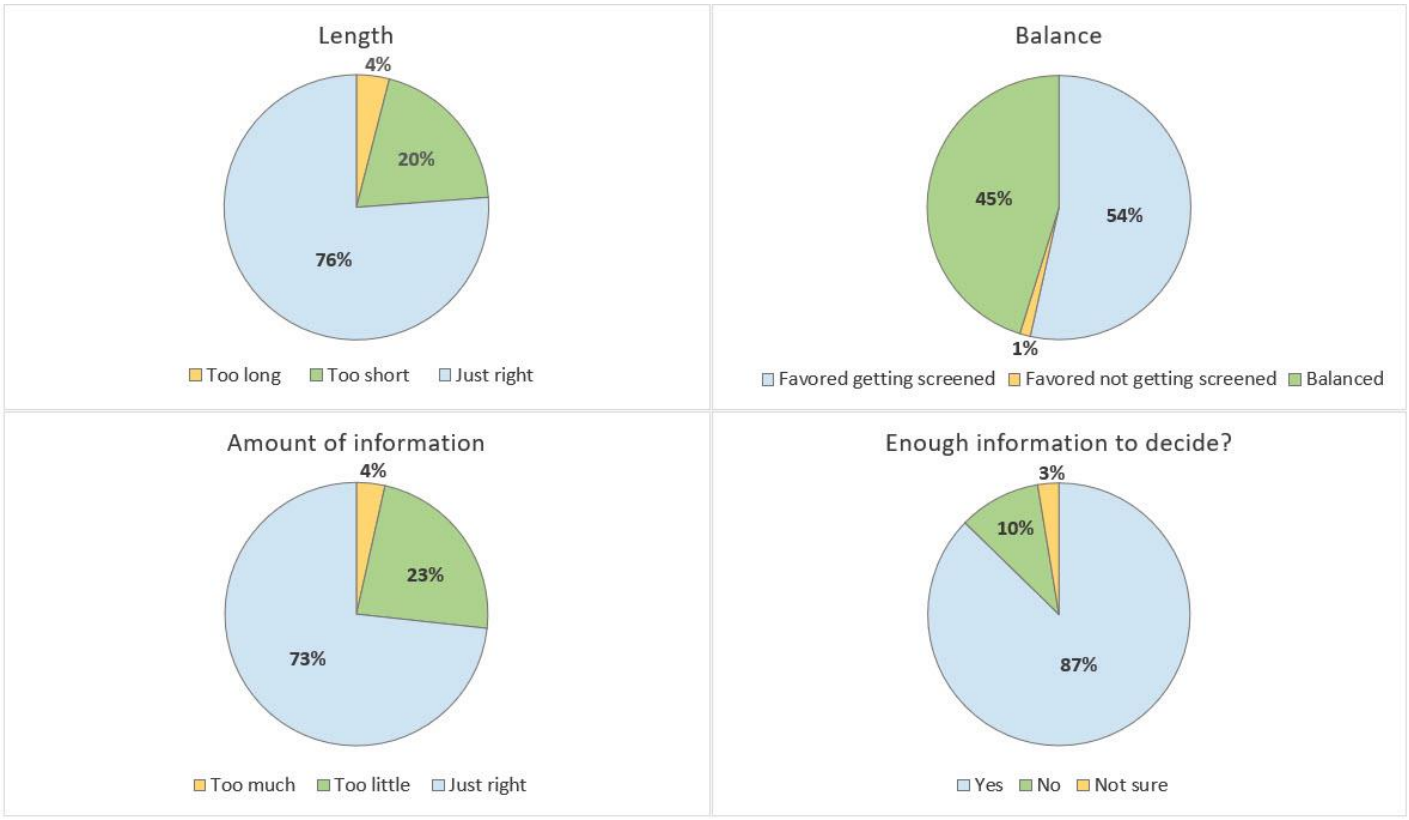
Characteristic	Patient Decision Aid Group (n=259)	Standard Education Group (n=257)	Total (N = 516)
Age, y			
≥65	69 (26.6)	77 (30.0)	146 (28.3)
<65	190 (73.4)	180 (70.0)	370 (71.7)
Sex			
Male	102 (39.4)	94 (36.6)	196 (38.0)
Female	157 (60.6)	163 (63.4)	320 (71.7)
Race/ethnicity[b]			
American Indian or Alaska Native	2 (0.8)	0	2 (0.4)
Asian	0	0	0
Black	62 (23.9)	76 (29.6)	138 (26.7)
Native Hawaiian or other Pacific Islander	0	1 (0.4)	1 (0.2)
Hispanic or Latino	7 (2.7)	1 (0.4)	8 (1.6)
White	185 (71.4)	177 (68.9)	362 (70.2)
Refused	0	1 (0.4)	1 (0.2)
More than 1 category	1 (0.4)	1 (0.4)	2 (0.4)
Other	2 (0.8)	0	2 (0.4)
Insurance			
Yes	239 (92.3)	230 (89.5)	469 (90.9)
No	20 (7.7)	27 (10.5)	47 (9.1)
Educational level			
Less than high school	41 (15.8)	36 (14.0)	77 (14.9)
Graduated high school or GED	72 (27.8)	77 (30.0)	149 (28.9)
Some college or trade school	107 (41.3)	105 (40.9)	212 (41.1)
Graduated college or more	39 (15.1)	39 (15.2)	78 (15.1)
Tobacco quitline call centers			
Alere, Seattle, Washington	21 (8.1)	19 (7.4)	40 (7.8)
Information & Quality Healthcare, Ridgeland, Mississippi	130 (50.2)	128 (49.8)	258 (50.0)
National Jewish Health, Denver, Colorado	40 (15.4)	43 (16.7)	83 (16.1)
Roswell Park, Buffalo, New York	68 (26.3)	67 (26.1)	135 (26.2)
Smoking history, median (IQR)			
Years smoked, No.	42.0 (40.0 – 49.0)	44.0 (40.0 – 50.0)	43.0 (40.0 – 50.0)
Cigarettes smoked per d, No.	20.0 (20.0 – 30.0)	20.0 (20.0 – 30.0)	20.0 (20.0 – 30.0)
Pack-year smoking history[c]	47.0 (40.0 – 63.0)	49.0 (40.0 – 63.8)	48.0 (40.0 – 63.0)

Abbreviation: GED, General Education Development; IQR, interquartile range.
[a] Data are presented as number (percentage) of participants unless otherwise indicated. [b] Percentages may not sum to 100 because of rounding. [c] A pack-year is equivalent to smoking 1 pack of cigarettes (n=20) a day for 1 year.

In addition, 63% of the study participants who received the patient decision aid scheduled a visit with a health care provider to discuss screening, and 29.5% scheduled a LDCT scan. This compares favorably with national data which show that roughly 14% of eligible patients received a LDCT in 2017.[4]

Participants also viewed the decision aid very favorably (see Figure 7). They felt the decision aid length and amount of information was about right or they wanted more information. Nearly 90% indicated they received enough information to make a decision about screening.

Figure 7. Acceptability of the video patient decision aid.

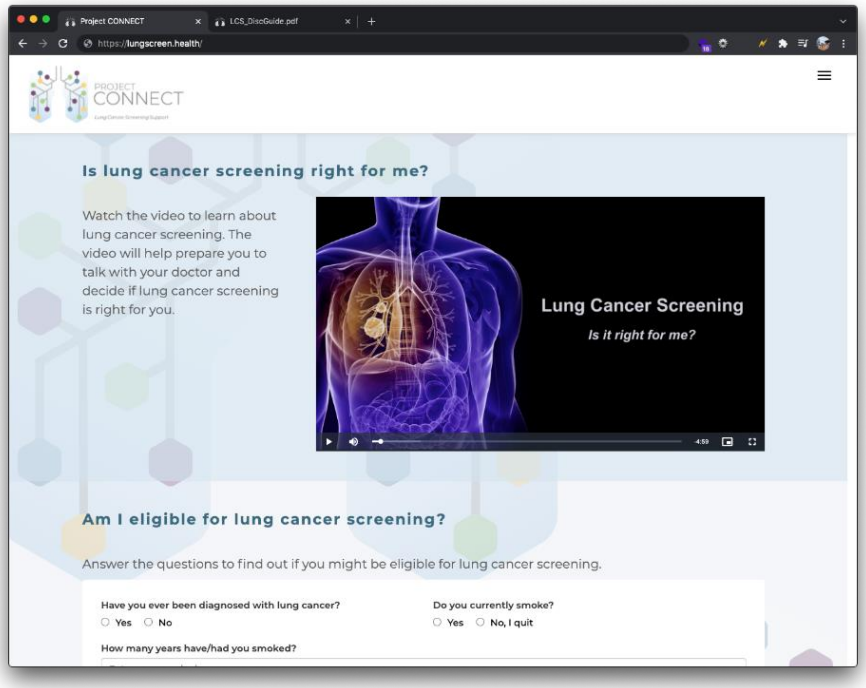


Project CONNECT

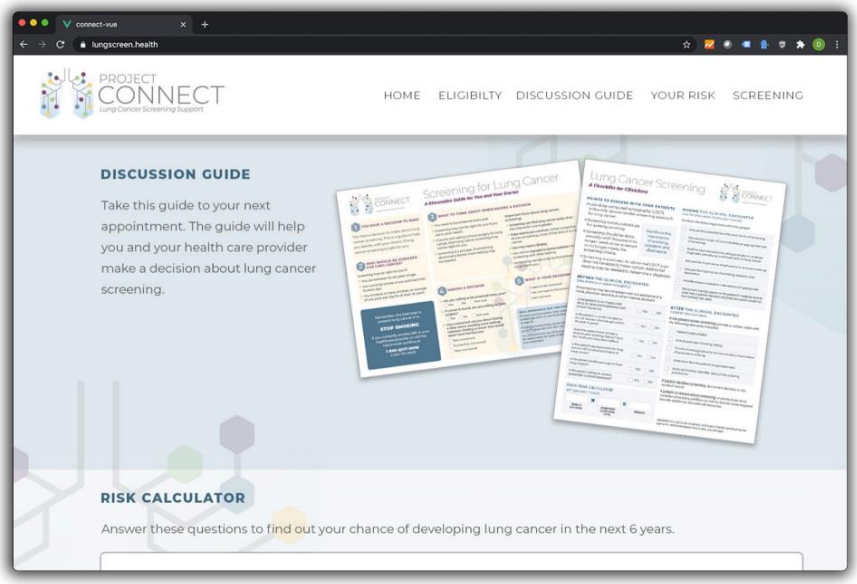
In follow up to Project INFORM, Project CONNECT was an implementation project to increase the number of potentially eligible people who use the patient decision aid to help make a decision about lung cancer screening. Seven quitlines participated in Project CONNECT to pilot the identification of eligible quitline participants and direct them to educational materials on lung cancer screening. The quitlines participated in pre-implementation activities (training and programming) and monthly check-ins with the MD Anderson-NAQC project team to discuss how implementation was proceeding for six months.

The MD Anderson team developed educational materials for quitline participants that were utilized during the project. These materials are described below and are available at no cost to all state quitlines on the lungscreen.health website.

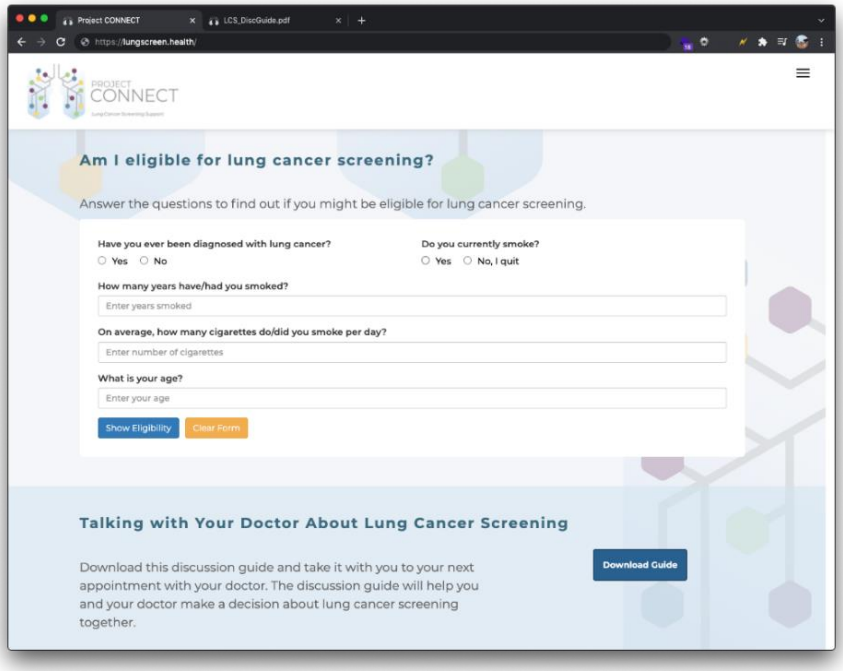
Video decision aid:
The video decision aid presents the potential benefits and harms of lung cancer screening in a brief video for participants to view.



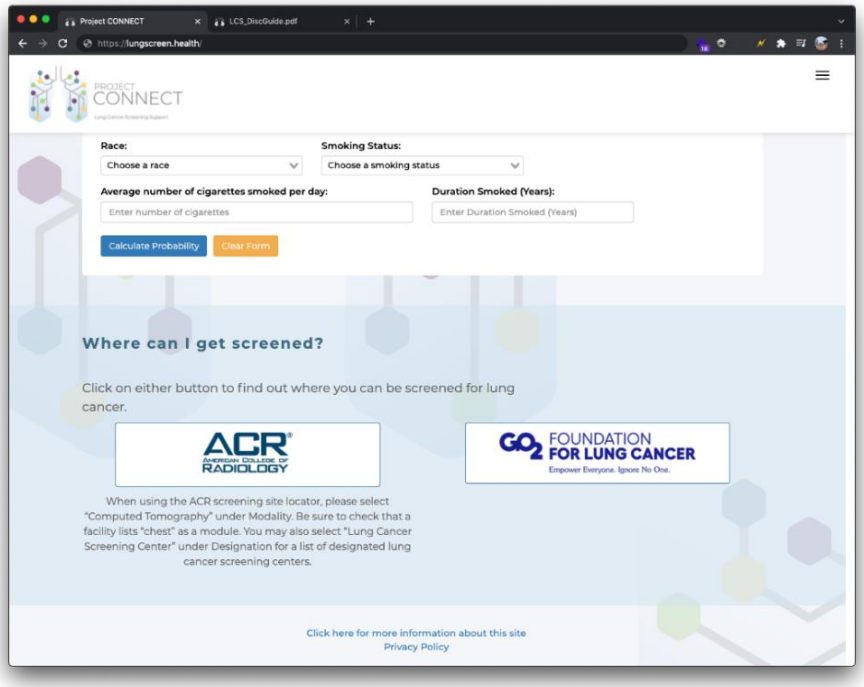
Encounter tool: The encounter tool is designed to support a discussion between the quitline participant and a health care provider on lung cancer screening. It has 2 sides, one for the participant and the other for a healthcare provider (see Appendix A). The participant-facing side highlights the potential benefits and harms of lung cancer screening. The healthcare provider side presents the evidence and steps to deliver the counseling and shared decision-making visit for lung cancer screening.



Lung cancer screening eligibility calculator: Participants can enter their age and smoking history into the lung cancer screening eligibility calculator to find out if they may be eligible for lung cancer screening.

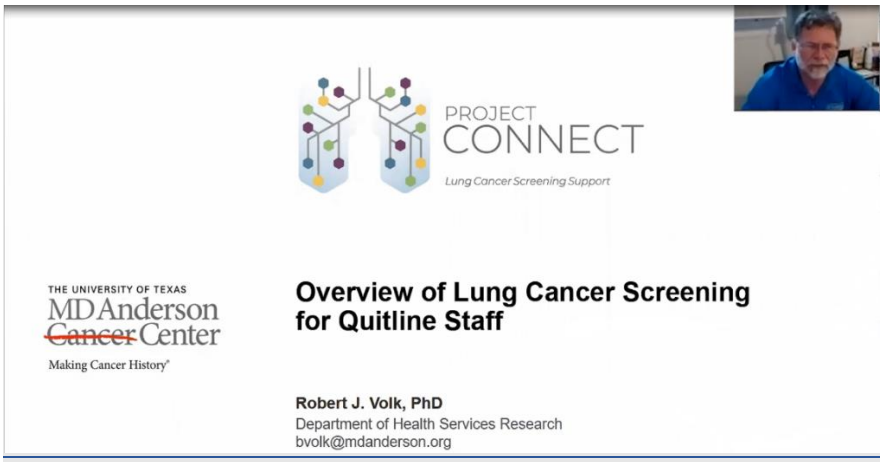


Lung cancer screening facility locator: The lung cancer screening facility locator is a web-based tool providing links to the American College of Radiology (ACR) Lung Cancer Screening Facility locator. The locator was developed for health professionals rather than consumers and includes both facilities accredited by the ACR and facilities designated as Screening Centers of Excellence (SCOE). While it accurately lists lung cancer screening facilities, the contact information listed may be for an administrative contact rather than a scheduler for a lung cancer screening appointment. Efforts are underway to create a more consumer-friendly version of a lung cancer screening facility locator.

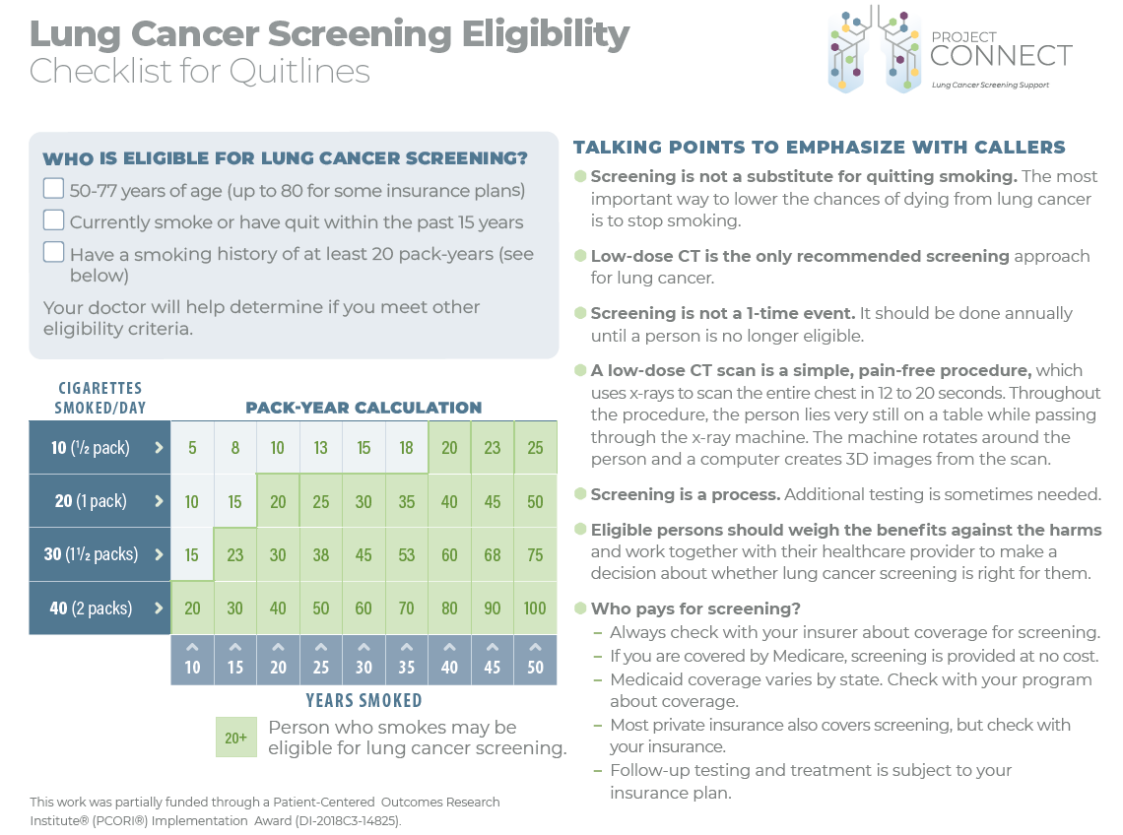


Project CONNECT also created the following materials for quitline staff to educate them about lung cancer screening and to guide them in answering questions from participants.

Training video: The 30-minute training video covers the basics about who is eligible for lung cancer screening and potential benefits and harms.



Talking points document: The talking points document provides science-based responses to frequently asked questions about lung cancer screening (see Appendix B).



Lung Cancer Screening Eligibility
Checklist for Quitlines

PROJECT CONNECT
Lung Cancer Screening Support

WHO IS ELIGIBLE FOR LUNG CANCER SCREENING?

- ☐ 50-77 years of age (up to 80 for some insurance plans)
- ☐ Currently smoke or have quit within the past 15 years
- ☐ Have a smoking history of at least 20 pack-years (see below)

Your doctor will help determine if you meet other eligibility criteria.

CIGARETTES SMOKED/DAY	PACK-YEAR CALCULATION								
10 (½ pack) ›	5	8	10	13	15	18	20	23	25
20 (1 pack) ›	10	15	20	25	30	35	40	45	50
30 (1½ packs) ›	15	23	30	38	45	53	60	68	75
40 (2 packs) ›	20	30	40	50	60	70	80	90	100
	^ 10	^ 15	^ 20	^ 25	^ 30	^ 35	^ 40	^ 45	^ 50

YEARS SMOKED

20+ Person who smokes may be eligible for lung cancer screening.

This work was partially funded through a Patient-Centered Outcomes Research Institute® (PCORI®) Implementation Award (DI-2018C3-14825).

TALKING POINTS TO EMPHASIZE WITH CALLERS

- **Screening is not a substitute for quitting smoking.** The most important way to lower the chances of dying from lung cancer is to stop smoking.
- **Low-dose CT is the only recommended screening** approach for lung cancer.
- **Screening is not a 1-time event.** It should be done annually until a person is no longer eligible.
- **A low-dose CT scan is a simple, pain-free procedure,** which uses x-rays to scan the entire chest in 12 to 20 seconds. Throughout the procedure, the person lies very still on a table while passing through the x-ray machine. The machine rotates around the person and a computer creates 3D images from the scan.
- **Screening is a process.** Additional testing is sometimes needed.
- **Eligible persons should weigh the benefits against the harms** and work together with their healthcare provider to make a decision about whether lung cancer screening is right for them.
- **Who pays for screening?**
  - Always check with your insurer about coverage for screening.
  - If you are covered by Medicare, screening is provided at no cost.
  - Medicaid coverage varies by state. Check with your program about coverage.
  - Most private insurance also covers screening, but check with your insurance.
  - Follow-up testing and treatment is subject to your insurance plan.

Summary of implementation findings: Participating state quitlines used various approaches to disseminate the educational materials to eligible quitline participants. Table 4 highlights the strategies used and their impact on reach and engagement with the educational materials. Although verbal referral reached more participants, it resulted in low engagement with the educational materials. Adding text and email resulted in better engagement. Embedding the educational resources on the quitline website resulted in even higher engagement with the materials.

Table 4. Used strategies and their impact on reach and engagement with the educational resources

State	A*	B	C*	D	E	F*	G	H
Used Strategies								
Verbal referral	X	X	X	X	X [a]	X	X	X [b]
Text		X	X	X	X			
Email		X	X	X	X		X	X
Mail			X			X		
Web		X		X		X	X	X
Social Media								X
Number of participants who received verbal referral	2011	786	293	1107	153	372	373	4227
Website Visits [c]	22	244	55	107	2	12693[d]	132	2963 [e]
Video decision aid	13 (59.1)	36 (14.8)	5 (9.1)	51 (7.5)	1 (50)	580 (3.5)	61 (46.2)	276 (9.3)
Encounter tool	3 (13.6)	16 (6.6)	1 (1.8)	4 (2.8)	0 (0.0)	69 (0.4)	2 (1.5)	6 (0.2)
Eligibility calculator	17 (77.3)	49 (20.1)	16 (29.1)	43 (40.2)	1 (50)	168 (0.6)	26 (19.7)	1122 (37.9)

Notes:
*1 year of data

[a] This state decided to do the verbal referral during the second call and not during intake.
[b] This state decided to refer participants who met the age criteria and not the smoking pack-year history criteria to the educational materials.
[c] These numbers represent the total number of visits to the educational resources on lungscreen.health and on the state tobacco quitline websites. The below numbers represent the number of interactions with the specific resource over the total number of visits. The sum of the number of interactions with the specific resources may not equal the total number of website visits as a visitor could interact with a resource on the page multiple times without reloading the page.
[d] This quitline placed the video decision aid on the front landing page of the quitline website. Each page load represented a potential exposure to the video decision aid.
[e] This quitline placed the video decision aid on its own special page on the quitline website. Each page load represented a potential exposure to the video decision aid.

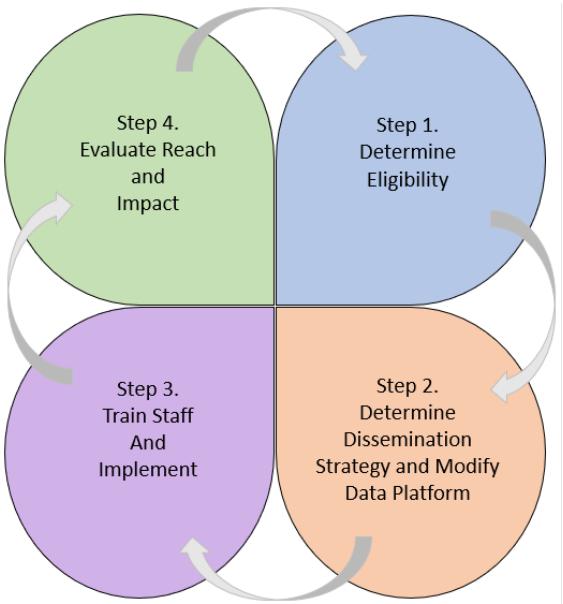
State H also engaged in retroactive email campaigns to previous QL participants from 9/8/2021 – 11/17/2021. A total of 36890 unique emails.

One state participated twice using different referral strategies.

Chapter 4. Steps to Integrate Education for Lung Cancer Screening in Quitlines

There are four main steps to integrate directing quitline participants to educational materials for lung cancer screening (see Figure 8).

Figure 8. Steps to integrate lung cancer screening as part of quitline services.



Step 1. Determine Eligibility

There are two options in determining eligibility of quitline participants for lung cancer screening.

1. Age (50-80 years of age) & 20 pack-year smoking history
2. Age eligibility only (50 to 80 years of age)

The NAQC recommended minimal dataset (MDS) elements[19] and NAQC optional MDS[20] elements can be used to do background calculations within the data platform (Box 3). The age + smoking pack-year history will require more modifications.

Box 3: MDS Elements to Determine Eligibility for Lung Cancer Screening

- **Age**: Optional MDS question OI 7a-1 to determine age of smoking initiation
- **Smoking pack-year history:** Required MDS intake question, RI 4a, can be used to calculate cigarettes smoked per day.

$$\frac{RI\ 4a}{20} X\ (OI\ 7a - 1 - RI\ 11)$$

$$\frac{Cigarettes\ smoked\ per\ day}{20} X\ (current\ age - age\ at\ smoking\ initation)$$

Things to consider when determining your method to identify potentially eligible participants.

- Which MDS items are part of the current intake process will inform which method is feasible.
- Determining eligibility based upon age + pack year will result in a more targeted approach, while age alone will reach a larger population and may include those who are not eligible for lung cancer screening.

Step 2: Determine Dissemination/Communication Strategies to Increase Awareness and Uptake of Lung Cancer Screening and Modify the Data Platform

Different dissemination/communication strategies, or a combination of strategies, can be used to increase the awareness and uptake of lung cancer screening educational materials by quitline participants. We found that verbal referral alone was not as effective in encouraging participants to engage with the educational materials compared to a multi-prong approach.

A multi-prong approach gives quitline funders and service providers the flexibility to align with state initiatives and goals regarding lung cancer, tobacco cessation, and lung cancer screening. An example of this approach would be a combination of verbal referral during intake with text messaging and email reengagement afterwards.

Table 5. Dissemination strategies details

Strategy	Timing	Target audience	Data platform modifications required	Appendices for Scripting/Sample
Web-linking &/or embed resources	NA	General public	No	C
Verbal referral	During intake &/or coaching call	Callers interested in enrolling into quitline cessation services	Yes	D, E
Email	After client is enrolled into QL services	Enrolled QL clients/previous enrollees	Yes	F, E
Text	After client is enrolled into QL services	Enrolled QL clients/previous enrollees	Yes	G, E
Mail decision aid	After client is enrolled into QL services	Enrolled QL clients/previous enrollees	Yes	A, H, E
Social media campaigns	Set with QL other social media campaigns	General public	No	E

Table 5 describes various dissemination/communication strategies as well as scripting and timing for each strategy. Implemented strategies can be revisited at any point and the data platform can be modified as needed.

When choosing a strategy/strategies, consider the following:

☐ How do participants interact with quitline services (verbal enrollment/web enrollment/etc.)?
☐ Does the quitline have the capacity to make changes to the data platform?
☐ How feasible is it to embed/link resources on the quitline website?
☐ How will strategies impact quitline services and/or media budgets?

Step 3. Train Quitline Call Staff

Once data platform modifications have been completed, staff training can begin. Training prepares quitline staff (counselors, intake specialists, and managers) for implementation and covers information about:

- ☐ Overview of lung cancer
- ☐ Identifying eligible quitline participants for LCS by age and pack-year smoking history
- ☐ Resources about lung cancer screening available to quitline participants
    - Lungscreen.health
- ☐ Resource for quitline staff - Talking Points document (see Appendix B), which contains LCS eligibility criteria, a simple pack-year calculator, and important points that may be raised by participants
- ☐ Review of any scripting modifications or quitline service processes

It is important to train quitline staff before launching the identification of eligible participants and directing them to educational materials on lung cancer screening.

It is also important to consider how new hires will be trained and if refresher courses or follow-up training will be needed after implementation begins.

Training can be delivered in two ways:

- ☐ Centralized training: The recorded training video can be used as a centralized training resource. Updates to the video will be completed by MD Anderson.
- ☐ Train-the-trainer model: Quitline training staff will design training based on the recorded training video, then train counselors and intake staff. While updates to the training video will be the responsibility of MD Anderson, quitline training staff will be responsible for updates to their training tools.

Step 4. Evaluate Reach and Impact

Evaluation during and after implementation will provide useful information about the number of participants reached and impact of the LCS education dissemination strategies on engagement with the resources. These metrics could be integrated as part of quitlines' usual approach to quality improvement and will enable decisions on what to continue, test, or discontinue. The NAQC annual survey[18] will include at least one question to assess whether the quitline has implemented this promising practice.

Chapter 5. Cost of Implementation

As part of the implementation project, we tracked the costs (time and other resources) required to program the database, train staff, and direct eligible participants to educational materials about lung cancer screening. For items that depended on personnel time, we tracked the number of hours needed and the job category (BLS 2020 National Wages Rates) to determine the cost for the necessary work per service provider. All the activities listed in the below table are described in Chapter 4.

The majority of the costs are related to the programming required to identify eligible participants and direct them to the educational materials on lung cancer screening. Table 6 presents a range of costs depending on the size, personnel, and complexity of the data platforms used by the service provider. For instance, one service provider had already taken steps to identify and direct quitline participants to educational materials on lung cancer screening prior to this project. As a result, their costs were lower than other service providers. Some service providers had multiple states, suggesting that the costs could be distributed across their states.

Table 6. Estimated Costs Associated with Implementation per Service Provider

Activity	Cost (min. – max.)	Estimated Time
Training		
Overall coordinating costs for training [a]	$225.58 - $748.53	
Initial training before implementation		
Coordination cost	$112.79 - $359.96	2-48 hours
Initial training setup	$81.08 - $359.96	2-14.5 hours
New hires after implementation started	$28.61 - $290.79	1-7 hours
Training cost (per staff)	$18.59 - $24.78	45 minutes – 1 hour
Programming costs		
Initial eligibility and referral programming		
i. Initial programming for verbal referral	$797.85 - $3,457.06	1-65 hours
ii. Additional referral pathways		
Text	$369.37	12-20 hours
Email	$369.37 - $1,109.70	12-27 hours
Social Media	$1,233.00	30 hours
Physically mailed flyers	$25.99	Minimal – 1 hour
Web integration	$712.74 - $986.40	12-24 hours
Others		
Testing and implementing programming	$544.86 - $853.10	6-70 hours
Administrating support	$81.06 - $567.42	2-15 hours
Implementation calls and referral		
Determine eligibility (per call)	$0.00 - $1.03	2-3 minutes
Directing to the website (per call)	$0.31 - $0.52	<1 minute – 1.25 minutes
Answering questions about LCS (per call)	$0.12 - $0.83	0.28 minutes – 2 minutes
Flyer (per flyer)	$0.05	1 minute-5 minutes

[a] The personnel involved and time spent in coordinating the initial trainings for quitline staff and for any new hires during the 6-month implementation period.

Chapter 6. Future Directions

This implementation guide offers a science-based approach for scaling and sustaining promising approaches to educating quitline participants on lung cancer screening, an important intervention for saving lives. Quitlines are uniquely positioned to assess eligibility and offer education on, and connection to, lung cancer screening for thousands of eligible individuals.

As Project CONNECT moves toward completion, important next steps will include:

- Use of the Implementation Guide by state funders and quitline service providers as a basis for integrating lung cancer screening assessment and education into routine quitline services and promotion tactics.
- Work with the quitline community to continue to learn and improve education and engagement processes to facilitate access to and uptake of screening for eligible adults.
- Monitor for disparities in engagement to identify populations that may otherwise be left behind and address identified needs to strengthen tailored outreach and engagement and improve access.
- Identify ways in which state or territorial health agencies can leverage quitlines to expand lung cancer screening, and advance partnerships with comprehensive cancer programs, other state or territorial health department programs, comprehensive cancer treatment centers, and lung cancer screening providers, among others. This could address health equity and ensure that all individuals who may be eligible for lung cancer screening will have access to screening and affordable treatment options, if indicated, regardless of insurance status.

ACKNOWLEDGEMENTS AND RECOMMENDED CITATION

Funding Source: This work was funded through a Patient-Centered Outcomes Research Institute (PCORI) Award (DI-2018C3-14825), The University of Texas MD Anderson Cancer Center Duncan Family Institute for Cancer Prevention and Risk Assessment, and a grant from NIH/NCI under award number P30CA016672 and used the Shared Decision-Making Core and Clinical Protocol and Data Management. The statements in this work are solely the responsibility of the authors and do not necessarily represent the views of the Patient-Centered Outcomes Research Institute (PCORI), its Board of Governors or Methodology Committee.

Authors: NAQC would like to acknowledge and thank the authors Lisa M. Lowenstein, PhD, MPH; Robert J. Volk, PhD; Linda Bailey, JD, MHS; Tracey Strader, MSW; Laurie Krupski, PhD, MS; and Jessica S. Lettieri, MPH for their time, effort and expertise in developing this excellent guide.

Contributors: We would like to thank the state funding agencies and quitline service providers who participated in this project: Colorado, Illinois, New Hampshire, New York, Ohio, Oklahoma, Pennsylvania, American Lung Association, National Jewish Health, Optum and Roswell Park Comprehensive Cancer Center. We would like to thank NAQC's Advisory Council (listed below) for the important role they played in approving the scope of this guide, reviewing the draft and approving the final version. Special thanks are extended to three members of the Advisory Council - Sandra Hernandez, BS; Michelle Lynch; and Chad D. Morris, PhD - who served as primary reviewers for this guide and contributed a great deal of time and expertise to ensuring a high-quality product. We also would like to acknowledge and thank other staff who contributed to this project: Viola B. Leal, MPH; Gabrielle C. Botello; Gabrielle F. Duhon, MPH; Laura C. Crocker, MSPH; and Natalia Gromov.

Advisory Council Members

Patricia Bax, RN, MS, NCTTP, ACB

Joshua I. Berry, MPH

Jen Cash, MPH

Sterling Fulton, MHA

Jon Hart, PhD

Sandra Hernandez, BS

Joshua Hudson

Jason Lindo

Michelle Lynch

Chad D. Morris, PhD

Meg Riordan, MPH

Etta Short, MS

Joyce Swetlick, MPH

Thomas Ylioja, PhD, MSW

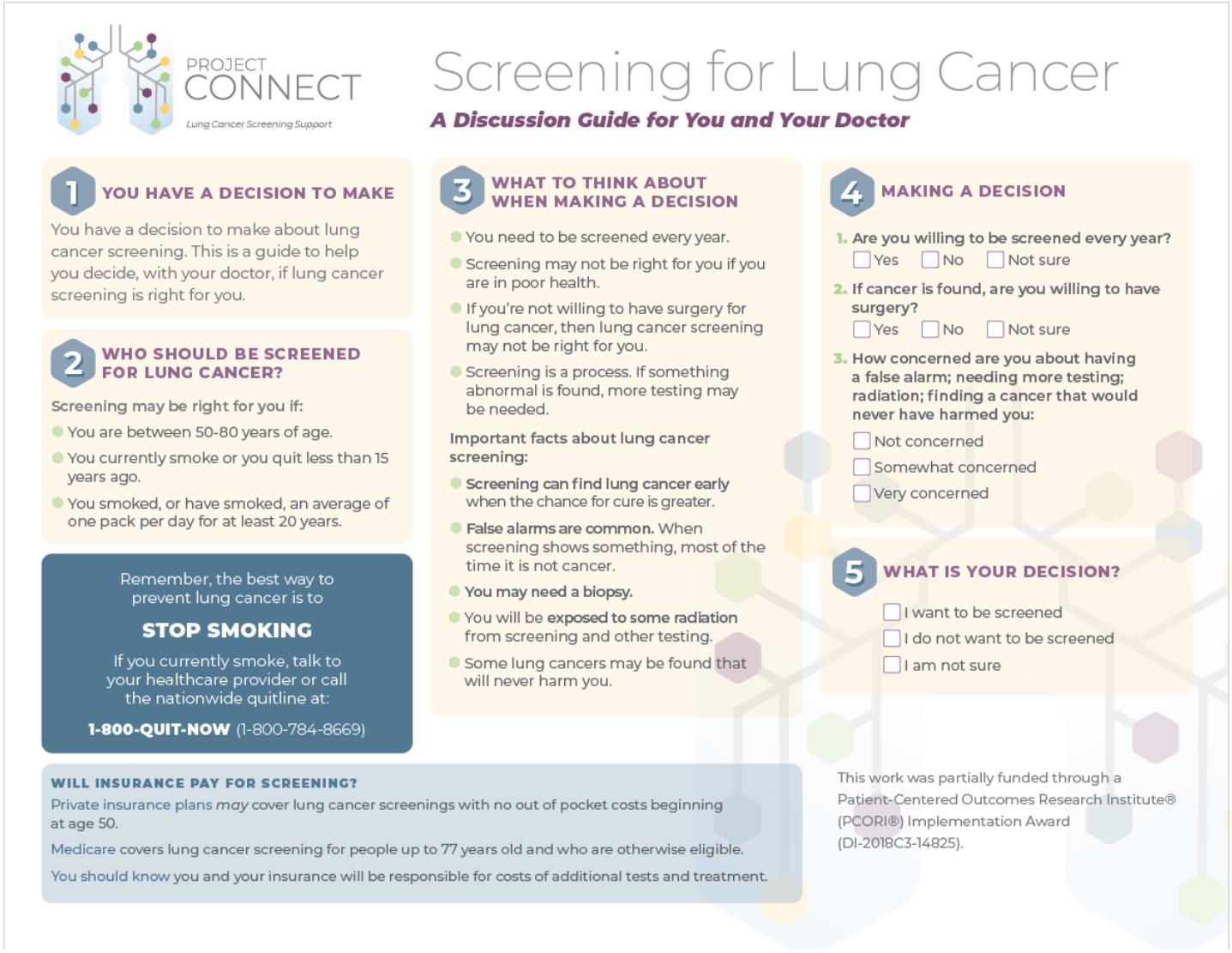
Michel Blanchard

Recommended Citation: North American Quitline Consortium (2022). Project CONNECT: An Implementation Guide for Quitlines, 2022. (Authors, Lowenstein LM, Volk RJ, et al.). Phoenix, Arizona

Appendix A. Encounter tool flyer

The encounter tool has 2 sides, one for the client and the other for a healthcare provider. The client-facing side highlights the potential benefits and harms of lung cancer screening. The healthcare provider side presents the evidence and steps to deliver the counseling and shared decision-making visit for lung cancer screening.

Patient Side



PROJECT CONNECT
Lung Cancer Screening Support

Screening for Lung Cancer

A Discussion Guide for You and Your Doctor

1 YOU HAVE A DECISION TO MAKE

You have a decision to make about lung cancer screening. This is a guide to help you decide, with your doctor, if lung cancer screening is right for you.

2 WHO SHOULD BE SCREENED FOR LUNG CANCER?

Screening may be right for you if:

- You are between 50-80 years of age.
- You currently smoke or you quit less than 15 years ago.
- You smoked, or have smoked, an average of one pack per day for at least 20 years.

Remember, the best way to prevent lung cancer is to

STOP SMOKING

If you currently smoke, talk to your healthcare provider or call the nationwide quitline at:

1-800-QUIT-NOW (1-800-784-8669)

3 WHAT TO THINK ABOUT WHEN MAKING A DECISION

- You need to be screened every year.
- Screening may not be right for you if you are in poor health.
- If you're not willing to have surgery for lung cancer, then lung cancer screening may not be right for you.
- Screening is a process. If something abnormal is found, more testing may be needed.

Important facts about lung cancer screening:

- **Screening can find lung cancer early** when the chance for cure is greater.
- **False alarms are common.** When screening shows something, most of the time it is not cancer.
- **You may need a biopsy.**
- You will be **exposed to some radiation** from screening and other testing.
- Some lung cancers may be found that will never harm you.

4 MAKING A DECISION

1. **Are you willing to be screened every year?**
   ☐ Yes ☐ No ☐ Not sure
2. **If cancer is found, are you willing to have surgery?**
   ☐ Yes ☐ No ☐ Not sure
3. **How concerned are you about having a false alarm; needing more testing; radiation; finding a cancer that would never have harmed you:**
   ☐ Not concerned
   ☐ Somewhat concerned
   ☐ Very concerned

5 WHAT IS YOUR DECISION?

☐ I want to be screened
☐ I do not want to be screened
☐ I am not sure

WILL INSURANCE PAY FOR SCREENING?

Private insurance plans *may* cover lung cancer screenings with no out of pocket costs beginning at age 50.

Medicare covers lung cancer screening for people up to 77 years old and who are otherwise eligible.

You should know you and your insurance will be responsible for costs of additional tests and treatment.

This work was partially funded through a Patient-Centered Outcomes Research Institute® (PCORI®) Implementation Award (DI-2018C3-14825).

Clinician-facing side

Lung Cancer Screening

Call-center Checklist and Talking Points

PROJECT CONNECT
Lung Cancer Screening Support

TALKING POINTS

- Low-dose computed tomography (LDCT) is the only recommended screening approach for lung cancer.
- Screening is not a substitute for quitting smoking.
- Screening should be done annually until the patient no longer needs to be screened or no longer meets the screening criteria.
- Screening is a process. An abnormal LDCT scan does not necessarily mean cancer. Additional testing may be needed to determine a diagnosis.

Reinforce the importance of smoking cessation and abstinence.

BEFORE THE CLINICAL ENCOUNTER

Determine your patient's eligibility.

This checklist may be completed with the assistance of a nurse, physician assistant, or other medical assistant.

Is the patient 50 to 77 years old? (50 to 80 years old for patients with private insurance)	☐ YES	☐ NO
Is the patient a current smoker or former smoker who has quit within the past 15 years?	☐ YES	☐ NO
Does the patient have at least a 20 pack-year smoking history? (See the *Pack-year Calculator* below.)	☐ YES	☐ NO
Is the patient asymptomatic for lung cancer with no personal history of lung cancer?	☐ YES	☐ NO
Is the patient healthy enough to have lung surgery?	☐ YES	☐ NO
Is the patient willing to receive potentially curative treatment?	☐ YES	☐ NO

PACK-YEAR CALCULATOR

(20 cigarettes = 1 pack)

Number of years smoked	×	Average number of packs smoked per day	=	Pack-years

DURING THE CLINICAL ENCOUNTER

Use the *Discussion Guide* (see reverse)

Confirm the following points with the patient:

- ☐ Discuss the potential benefits and harms of screening
- ☐ Discuss the impact of comorbidities on appropriateness of screening
- ☐ Confirm that thepatient is willing and able to undergo diagnostic procedures and treatment for lung cancer
- ☐ Discuss the importance of adherence to annual screening
- ☐ Discuss the importance of smoking cessation and abstinence
- ☐ Provide tobacco cessation interventions if appropriate
- ☐ Document the discussion in the patient's medical record, note that a patient decision aid (the *Discussion Guide* on the reverse) was used

AFTER THE CLINICAL ENCOUNTER

Establish the next steps.

If the patient wants screening, provide a written order with the following elements included:

- ☐ Patient's date of birth
- ☐ Actual pack-year smoking history
- ☐ Current smoking status; for former smokers, the number of years since quitting
- ☐ Statement that the patient is asymptomatic
- ☐ National Provider Identifier (NPI) of the ordering practitioner

If patient declines screening, document decision in the medical record.

If patient is unsure about screening or wants more time, consider scheduling a follow-up visit to discuss screening and provide additional educational resources.

Adapted from Lung Cancer Screening: A Clinician's Checklist developed by the Agency for Healthcare Research and Quality, www.ahrq.gov

Appendix B. Talking points for quitline staff

The talking points document provides some responses to frequently asked questions about lung cancer screening.

Lung Cancer Screening Eligibility
Checklist for Quitlines

PROJECT CONNECT
Lung Cancer Screening Support

WHO IS ELIGIBLE FOR LUNG CANCER SCREENING?

- ☐ 50-77 years of age (up to 80 for some insurance plans)
- ☐ Currently smoke or have quit within the past 15 years
- ☐ Have a smoking history of at least 20 pack-years (see below)

Your doctor will help determine if you meet other eligibility criteria.

CIGARETTES SMOKED/DAY	PACK-YEAR CALCULATION								
10 (½ pack) ›	5	8	10	13	15	18	20	23	25
20 (1 pack) ›	10	15	20	25	30	35	40	45	50
30 (1½ packs) ›	15	23	30	38	45	53	60	68	75
40 (2 packs) ›	20	30	40	50	60	70	80	90	100
	^ 10	^ 15	^ 20	^ 25	^ 30	^ 35	^ 40	^ 45	^ 50

YEARS SMOKED

20+ Person who smokes may be eligible for lung cancer screening.

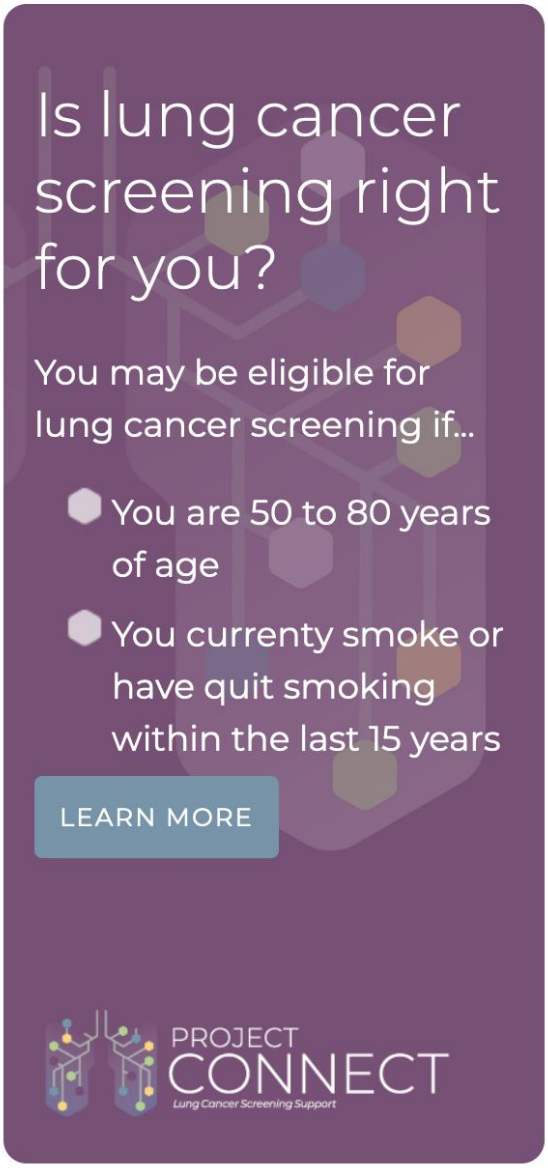
This work was partially funded through a Patient-Centered Outcomes Research Institute® (PCORI®) Implementation Award (DI-2018C3-14825).

TALKING POINTS TO EMPHASIZE WITH CALLERS

- **Screening is not a substitute for quitting smoking.** The most important way to lower the chances of dying from lung cancer is to stop smoking.
- **Low-dose CT is the only recommended screening** approach for lung cancer.
- **Screening is not a 1-time event.** It should be done annually until a person is no longer eligible.
- **A low-dose CT scan is a simple, pain-free procedure,** which uses x-rays to scan the entire chest in 12 to 20 seconds. Throughout the procedure, the person lies very still on a table while passing through the x-ray machine. The machine rotates around the person and a computer creates 3D images from the scan.
- **Screening is a process.** Additional testing is sometimes needed.
- **Eligible persons should weigh the benefits against the harms** and work together with their healthcare provider to make a decision about whether lung cancer screening is right for them.
- **Who pays for screening?**
  - Always check with your insurer about coverage for screening.
  - If you are covered by Medicare, screening is provided at no cost.
  - Medicaid coverage varies by state. Check with your program about coverage.
  - Most private insurance also covers screening, but check with your insurance.
  - Follow-up testing and treatment is subject to your insurance plan.

Appendix C. Example of a web banner

This image is an example of a banner that can be used to link from the quitline website to the Project CONNECT LCS resource website. Banners can also be horizontal.



Appendix D. Example of verbal script for referring participants to the lung cancer screening resource website

This language is an example of scripting that can be used to verbally refer quitline callers to the resource website.

"That's the end of the intake. Now I would like to talk briefly lung cancer screening. Based on your age and how much you smoke, you may be eligible for free screening through your insurance. Would you like more information about lung cancer screening?"

[If Yes]

"Great, I will provide you with the link to a website that has educational materials about lung cancer screening. Please write down lungscreen.health."

[If no]

"Ok, if you change your mind, you can write down lungscreen.health for future reference."

Appendix E. Example of motivational messaging with media use suggestions

This collection of motivational messages is for use by service providers at the discretion of state funders. A URL would be included in any of these messages based on the type of message. See footnotes.

Motivational Message	Suggested Use
Congratulations on your interest in quitting smoking! What's next? The next time you speak with your doctor, ask about lung cancer screening. It is quick and covered by most insurance companies. What are you waiting for?	Text[a], email[b], postcard[c], phone call[d]
Lung cancer can be cured if caught early. Know the benefits. Know the risks. Talk with your provider about lung cancer screening.	Text, email, postcard, phone call
Annual exams: √ Wellness Exam √ Flu shot √ Annual Eye Exam √ Semi Annual Dental Exam ? Lung Cancer Screening. When scheduling your annual appointments, remember to schedule your lung cancer screening!	Email, postcard
Breathe a sigh of relief. Talk to your doctor about lung cancer screening. It's quick, it's simple and it could save your life.	Text, email, postcard, phone call
Cherish your loved ones longer. Talk to your doctor about lung cancer screening. It may save your life.	Text, email, postcard, phone call
Lung cancer screening can find lung cancer early when the chance for a cure is greater. Give yourself the gift of knowing.	Text, email, postcard, phone call
No matter how long you have smoked, it is never too late to check the health of your lungs. You could be healthier than you think. Talk with your doctor about lung cancer screening.	Text, email, postcard, phone call
Worried about your health? Are you concerned you may have lung cancer? Talk to your doctor about whether lung cancer screening is right for you.	Text, email, postcard, phone call
It's okay to have mixed feelings about screening for lung cancer. Don't let that stop you! Talk to your doctor about lung cancer screening.	Text, email, postcard, phone call
Think about the last time you accomplished a difficult task. How can you apply those skills to your decision about screening for lung cancer? Talk to your doctor about whether lung cancer screening is right for you.	Text
"The time is always right to do what is right." Martin Luther King, Jr. Is now the right time to consider lung cancer screening? Talk to your doctor about lung cancer screening.	Text
"The future depends on what we do in the present." Mahatma Gandhi. How might getting screened for lung cancer change your future?	Text
This moment can be the start of something new. Talk to your doctor about lung cancer screening.	Text
If you don't take care of your body, where are you going to live? Talk to your doctor about lung cancer screening.	Text

Example: [a] lungscreen.health/text/XX, [b] Example: lungscreen.health/email/XX, [c] Example: lungscreen.health/XX or QR code, [d] Example: lungscreen.health

'XX' represents state abbreviation.

Appendix F. Example of an email referral

This is an email scripting example for referring quitline callers to the resource website using a state-tailored URL and QR code.

Appendix G. Example of text message referral scripting

This language is an example of simple text message scripting for referring quitline callers to the resource website using a state-tailored URL.

"Is lung cancer screening right for you? To find out, please visit https://lungscreen.health/text/XX[a]"

[a] XX is state abbreviation

Appendix H. Example of a physical mailer referral

This is a physical mailer scripting example for referring quitline callers to the resource website using a state-tailored URL and QR code.

References

1. Islami F, Goding Sauer A, Miller KD, et al. Proportion and number of cancer cases and deaths attributable to potentially modifiable risk factors in the United States. *CA Cancer J Clin.* 2018;68(1):31-54.
2. American Cancer Society. *Cancer Facts & Figures 2022.* Atlanta: American Cancer Society;2022.
3. Aberle DR, Adams AM, Berg CD, et al. Reduced lung-cancer mortality with low-dose computed tomographic screening. *The New England journal of medicine.* 2011;365(5):395-409.
4. Zahnd WE, Eberth JM. Lung Cancer Screening Utilization: A Behavioral Risk Factor Surveillance System Analysis. *Am J Prev Med.* 2019;57(2):250-255.
5. Krist AH, Davidson KW, Mangione CM, et al. Screening for Lung Cancer: US Preventive Services Task Force Recommendation Statement. *JAMA : the journal of the American Medical Association.* 2021;325(10):962-970.
6. Ritzwoller DP, Meza R, Carroll NM, et al. Evaluation of Population-Level Changes Associated With the 2021 US Preventive Services Task Force Lung Cancer Screening Recommendations in Community-Based Health Care Systems. *JAMA Network Open.* 2021;4(10):e2128176-e2128176.
7. United States Preventive Services Task Force. Understanding How the U.S. Preventive Services Task Force (USPSTF) Works 2021.
8. 111th Congress (2009-2010). H.R.3590 - 111th Congress (2009-2010): Patient Protection and Affordable Care Act. In:2010.
9. United States Preventive Services Task Force. Colorectal Cancer: Screening. https://www.uspreventiveservicestaskforce.org/uspstf/recommendation/colorectal-cancer-screening. Published 2021. Accessed May 9, 2022.
10. United States Preventive Services Task Force. Breast Cancer: Screening. https://www.uspreventiveservicestaskforce.org/uspstf/recommendation/breast-cancer-screening. Published 2016. Accessed May 9 2022.
11. U.S. Department of Health and Human Services. *Smoking Cessation: A Report of the Surgeon General* Atlanta, GA: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, National Center for Chronic Disease Prevention and Health Promotion, Office on Smoking and Health, 2020.
12. Williams RM, Cordon M, Eyestone E, et al. Improved motivation and readiness to quit shortly after lung cancer screening: Evidence for a teachable moment. *Cancer.* 2022;128(10):1976-1986.
13. Centers for Medicare & Medicaid Services. NCA - Screening for Lung Cancer with Low Dose Computed Tomography (LDCT) (CAG-00439R) - Decision Memo. https://www.cms.gov/medicare-coverage-database/view/ncacal-decision-memo.aspx?proposed=N&ncaid=304&=. Published 2022. Updated 2/10/2022. Accessed 2/22/2022, 2022.
14. American Lung Association. State Lung Cancer Screening Coverage Toolkit. https://www.lung.org/lung-health-diseases/lung-disease-lookup/lung-cancer/saved-by-the-scan/resources/state-lung-cancer-screening. Published 2021. Accessed March 22, 2022.
15. Ma J, Ward EM, Smith R, Jemal A. Annual number of lung cancer deaths potentially avertable by screening in the United States. *Cancer.* 2013;119(7):1381-1385.
16. Lowenstein LM, Escoto KH, Leal VB, et al. Randomized trial of a patient-centered decision aid for promoting informed decisions about lung cancer screening: Implementation of a PCORI study protocol and lessons learned. *Contemporary clinical trials.* 2018;72:26-34.

17. Volk RJ, Lowenstein LM, Leal VB, et al. Effect of a Patient Decision Aid on Lung Cancer Screening Decision-Making by Persons Who Smoke: A Randomized Clinical Trial. *JAMA Netw Open.* 2020;3(1):e1920362.
18. North American Quitline Consortium. Results from the 2020 NAQC Annual Survey of Quitlines. https://www.naquitline.org/page/2020survey. Published 2020. Accessed.
19. North American Quitline Consortium. MDS Intake Questionnaire: Required Questions. https://www.naquitline.org/page/mds. Published 2019. Accessed 3/15/2022.
20. North American Quitline Consortium. MDS Optional Question Bank for Intake and Follow-up. https://www.naquitline.org/page/mds. Published 2020. Accessed.

Glossary

Intake	Typically the initial contact between an individual and a quitline, the intake is used to collect information such as tobacco use status, demographic data, and readiness to engage in a quit attempt. Intakes are also used to determine eligibility and insurance coverage for cessation services. An intake may be completed prior to counseling services or as part of the first coaching call.
MD Anderson	The University of Texas MD Anderson Cancer Center is located in Houston, Texas. The mission of The University of Texas MD Anderson Cancer Center is to eliminate cancer in Texas, the nation, and the world through outstanding programs that integrate patient care, research and prevention, and through education for undergraduate and graduate students, trainees, professionals, employees and the public.
MDS	Minimal Data Set (MDS) is a standard set of intake and follow-up questions asked of quitline participants and used for program evaluation. The MDS was developed by NAQC in 2005 and was adopted by all state and provincial quitlines in North America by 2006.
NAQC	North American Quitline Consortium (NAQC) is an international, non-profit membership organization that seeks to promote evidence-based quitline services across diverse communities in North America. Membership is made-up of over 400 organizations and individuals from across North America. Members consist of organizations and individuals that provide quitline services, fund quitlines, conduct research around quitline-related topics, advance national cessation policies, and work in other areas of tobacco control.
Quitline	Telephone-based tobacco cessation services to help participants quit tobacco. Services offered by quitlines may include coaching and counseling, referrals, mailed materials, training to healthcare providers, web-based services and free medications such as nicotine replacement therapy (NRT).
Quitline funder	A public entity such as a state health department, that funds free quitline services, typically using tobacco settlement funds, CDC grants, state tobacco taxes, or federal and state public health funds.
Quitline Service Provider	An entity that operates a quitline under contract with state health departments, health plans and/or corporations.