



Shared Decision Making Tools for Lung Cancer Screening

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SHARE Approach Webinar Series

Webinar 5

Shared Decision Making Tools for
Lung Cancer Screening

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Presenters and moderator



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Disclosures



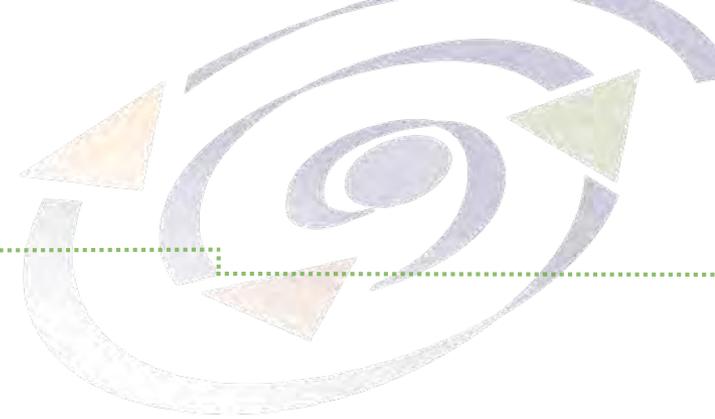
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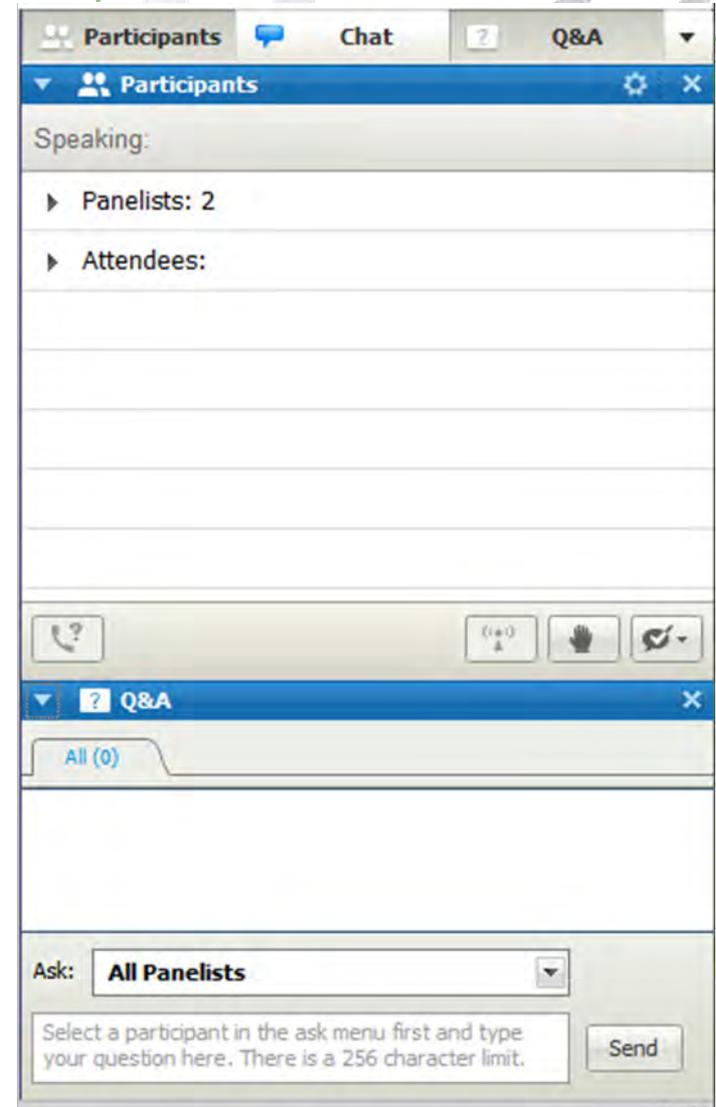
Accreditation



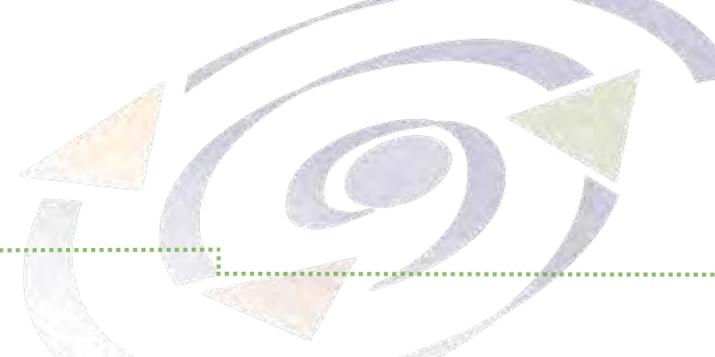
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- ▶ Please address your questions to “All Panelists” in the dropdown menu.
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- ▶ Questions will be read aloud by the moderator.
- ▶ SHARE@ahrq.hhs.gov



Learning objectives



At the conclusion of this activity, participants will be able to:

1. Explain how shared decision making can be helpful to patients and providers in deciding whether to participate in lung cancer screening.
2. Describe the key components of an effective lung cancer screening toolkit for use in primary care settings.
3. Explain how using an effective decision aid and other tools can meet the shared decision making and patient counseling visit requirements of the Centers for Medicare & Medicaid Services (CMS) for Medicare coverage of lung cancer screening with low-dose computed tomography.

AHRQ's Effective Health Care Program



<http://www.effectivehealthcare.ahrq.gov/>



Shared Decision Making Tools for Lung Cancer Screening

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Effective Health Care Program

Let's begin with a case...



- ▶ A 60-year-old female presents for a periodic health examination. She mentions seeing a large billboard along the highway, showing \$99 lung cancer screenings at a local medical facility. She asks, “Doc, should I get that lung screening test? I’ve been smoking for 40 years.”
- ▶ What do you recommend?

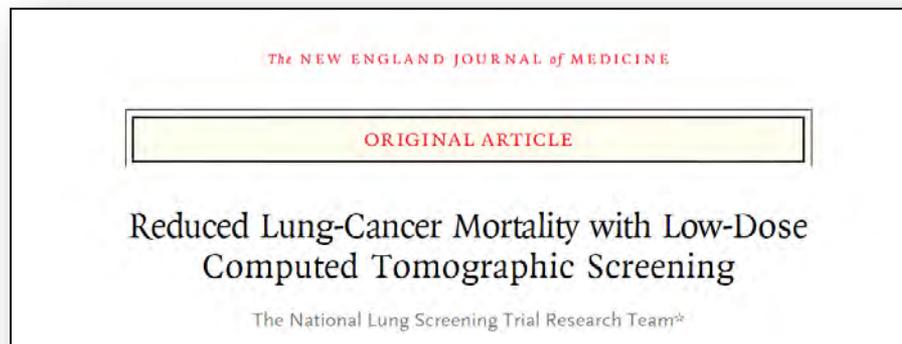
The National Lung Screening Trial

Main findings published in 2011.

Randomized >53,000 heavy smokers to...

- Low-dose computed tomography (LDCT) or chest x-ray
- 3 annual screens
- Followed 6.5 years

**Reduced lung cancer deaths
by 16-20%.
*A game changer!***



NNS = 320

The National Lung Screening Trial



But...

...lung cancer screening with LDCT carries potential harms:

- Radiation exposure (?)
- High positive rate:
 - 20-25% per scan
 - ~40% if screened annually for 3 years
- Invasive procedures
- Incidental findings (may be a benefit)
- Overdiagnosis rate estimated at 10-20%

Response from the health care community



Direct-to-consumer marketing campaigns

CT scans for smokers offered for \$99 in hopes of catching lung cancer early

A \$99 lung scan could save your life.
Find out if you're a good candidate.

New Clinical Guidelines

ACS, ASCO, ACCP, NCCN (2012, 2013)

All emphasize the importance of an informed/shared decision making process!

**Smoking cessation/abstinence
is essential!**

Lung cancer screening recommendations

CLINICAL GUIDELINE

Annals of Internal Medicine

Screening for Lung Cancer: U.S. Preventive Services Task Force Recommendation Statement

Virginia A. Moyer, MD, MPH, on behalf of the U.S. Preventive Services Task Force*

Released
December
2013

- Update of 2004 recommendation
- Triggered largely by publication of NLST
- Used comparative modeling to determine optimal screening strategy
 - Most efficient strategy: interval, age at initiation/stopping, pack-year threshold, years since quit

USPSTF Recommendation: Lung Cancer Screening – December 2013



- ▶ The USPSTF recommends annual screening for lung cancer with low-dose computed tomography (LDCT) in adults aged **55 to 80 years** who have a **30 pack-year smoking history** and **currently smoke or have quit within the past 15 years**.
- ▶ Screening should be discontinued once a person has not smoked for 15 years or develops a health problem that substantially limits life expectancy or the ability or willingness to have curative lung surgery.

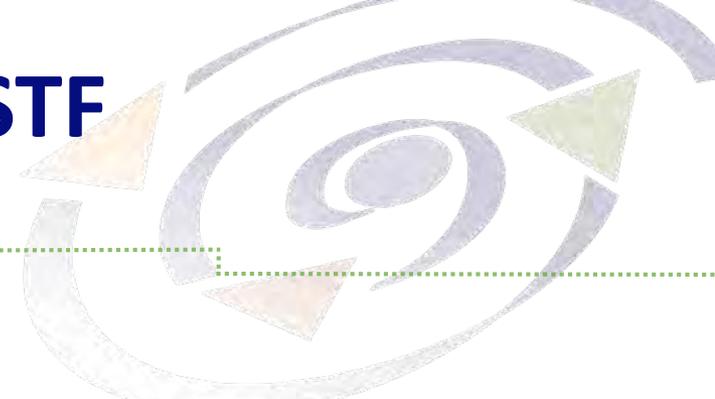
USPSTF Recommendation: Lung Cancer Screening – December 2013



▶ Other considerations: **Smoking cessation counseling**

1. Persons referred by a PCP should receive counseling before referral.
2. For persons who present for screening without a referral (e.g., “self-refer” to a screening center), incorporating smoking cessation counseling is encouraged.

The importance of the USPSTF

The USPSTF logo is located in the top right corner of the slide. It features a stylized eye with a spiral iris in shades of purple and blue. Three arrows, one orange, one green, and one grey, point outwards from the eye. A dotted green line extends from the left side of the slide, passing through the logo.

- ▶ Is a trusted, unbiased developer of evidence-based clinical preventive services recommendations
- ▶ Greatly impacts recommendations from professional organizations and (potentially) clinical practice
- ▶ **NEW:** ACA mandates first-dollar coverage for all preventive services that receive a **Grade A or B recommendation** from the USPSTF.

A's and B's are now covered without copay!

CMS National Coverage Determination – February 5, 2015



Medicare will now cover lung cancer screening with LDCT once per year for Medicare beneficiaries who meet all of the following criteria:

- they are age 55-77, and are either current smokers or have quit smoking within the last 15 years;
- they have a tobacco smoking history of at least 30 “pack years” (an average of one pack a day for 30 years); and
- they receive a written order from a physician or qualified non-physician practitioner that meets certain requirements.

Medicare coverage includes a visit for counseling and shared decision-making on the benefits and risks of lung cancer screening. The NCD also includes required data collection and specific coverage eligibility criteria for radiologists and radiology imaging centers, consistent with the National Lung Screening Trial protocol, U.S. Preventive Services Task Force recommendation, and multi-society multi-disciplinary stakeholder evidence-based guidelines.

- ▶ It’s the first covered service that explicitly requires **shared decision making**.
- ▶ The visit for counseling and shared decision making is reimbursed by CMS.

CMS – Criteria for lung cancer screening: Beneficiary eligibility



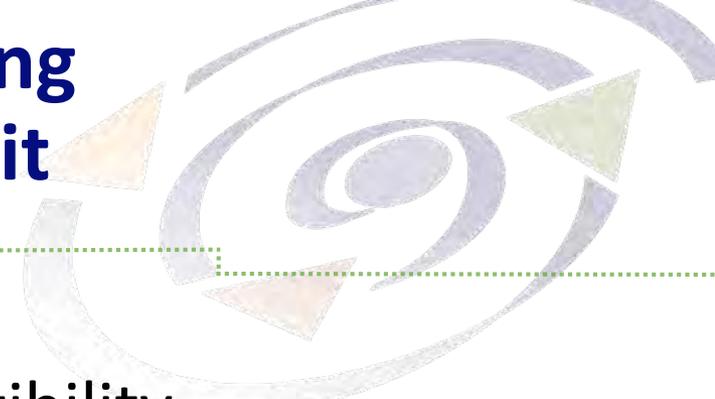
- ▶ Age 55 – 77 years
- ▶ Asymptomatic (no signs/symptoms of lung cancer)
- ▶ 30-plus pack-year smoking history
- ▶ Current smoker or quit within the last 15 years

CMS – Criteria for lung cancer screening: Beneficiary eligibility



- ▶ Written order for LDCT:
 - **Initial service:** Beneficiary receives written order during lung cancer screening and shared decision making visit from physician or qualified non-physician.
 - **Subsequent service:** Beneficiary receives written order during any appropriate visit from physician or qualified non-physician.

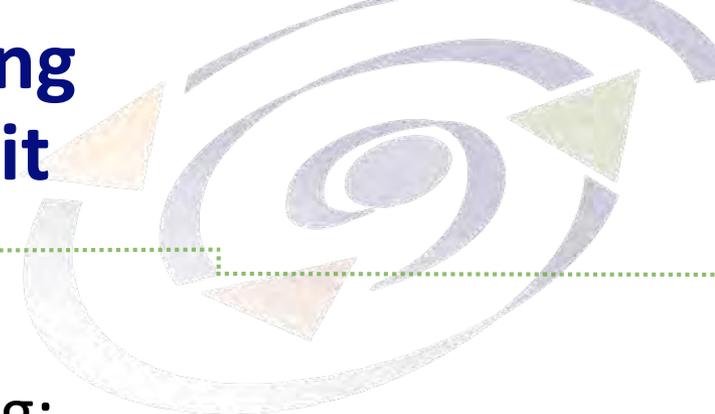
Lung cancer screening counseling and shared decision making visit



1. Determination of beneficiary eligibility
 - Age
 - Absence of symptoms
 - “Specific calculation of cigarette smoking pack-years”
 - Number years since quit

Documented in medical record

Lung cancer screening counseling and shared decision making visit

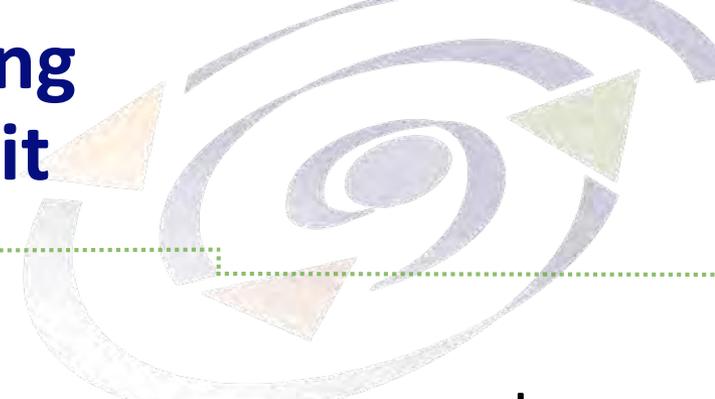


2. Shared decision making, including:

- Use of 1 or more decision aids, to include...
 - Benefits, harms, follow-up diagnostic testing, over-diagnosis, false positive rate, total radiation exposure

Documented in medical record

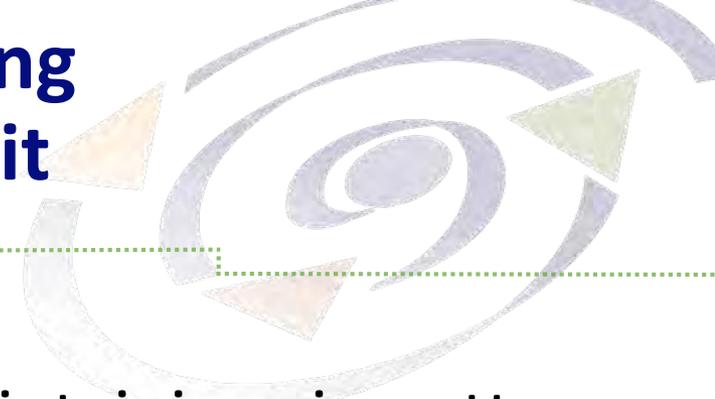
Lung cancer screening counseling and shared decision making visit



3. Counseling on importance of adherence to annual LDCT, impact of comorbidities, and ability or willingness to undergo diagnosis and treatment.

Documented in medical record

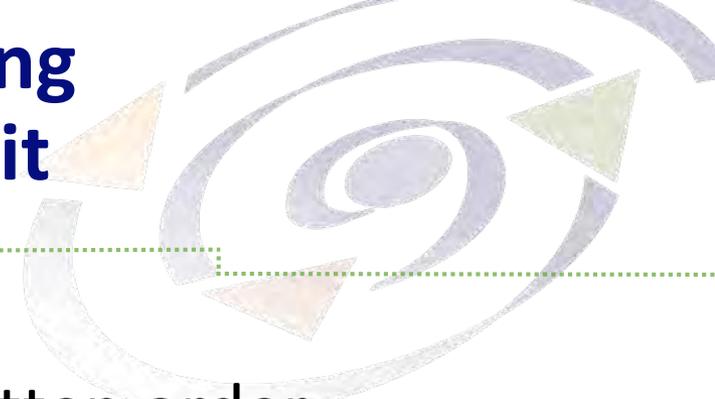
Lung cancer screening counseling and shared decision making visit



4. Counseling on importance of maintaining cigarette abstinence, or furnishing information about tobacco cessation services.

Documented in medical record

Lung cancer screening counseling and shared decision making visit



5. “If appropriate,” furnishing a written order containing the following:
 - Date of birth
 - Actual pack-year history (number)
 - Current smoking status, number years since quit
 - Statement beneficiary is asymptomatic
 - National Provider Identifier (NPI) of ordering practitioner

Radiologist eligibility criteria



- ▶ Certified by American Board of Radiology.
- ▶ Documented training in diagnostic radiology and radiation safety.
- ▶ Supervision/interpretation of 300+ chest CT acquisitions in past 3 years.
- ▶ Participation in CME in accordance with ACR standards.

Radiology imaging center criteria



- ▶ Performs LDCT with volumetric CT dose index.
- ▶ Utilizes standardized nodule identification system.
- ▶ Makes available smoking cessation interventions for current smokers.
- ▶ Collects/submits data to national registry for each LDCT lung cancer screening performed.

Medicare coverage of screening for lung cancer with low-dose computed tomography (LDCT)

Health Care Common Procedure Coding System (HCPCS) Codes

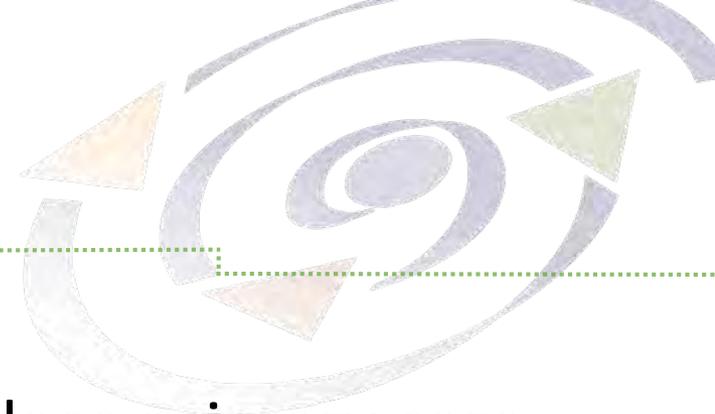
- **G0296** – Counseling visit to discuss need for lung cancer screening LDCT (service is for eligibility determination and shared decision making)
- **G0297** – LDCT for lung cancer screening

<https://www.cms.gov/Outreach-and-Education/Medicare-Learning-Network-MLN/MLNMattersArticles/Downloads/mm9246.pdf>

Finding ACR Designated Lung Cancer Screening Centers

<https://www.cms.gov/Medicare/Medicare-General-Information/MedicareApprovedFacilities/Lung-Cancer-Screening-Registries.html>

Screening on a national scale



- ▶ New clinical recommendations place primary care clinicians at the forefront of implementing lung cancer screening on a national scale.
- ▶ **But are we ready?**
- ▶ The Eisenberg Center has developed a new implementation toolkit for primary care clinicians.

Shared decision making is fundamentally a communication activity



- ▶ Shared decisions require good communication between clinicians and patients.
- ▶ Decision aids provide a structured approach to providing information about options and trade-offs, values related to options and outcomes, and can help foster deliberation.
- ▶ But, decision aids are not sufficient to ensure a high-quality shared decision making process.

Developing a new toolkit



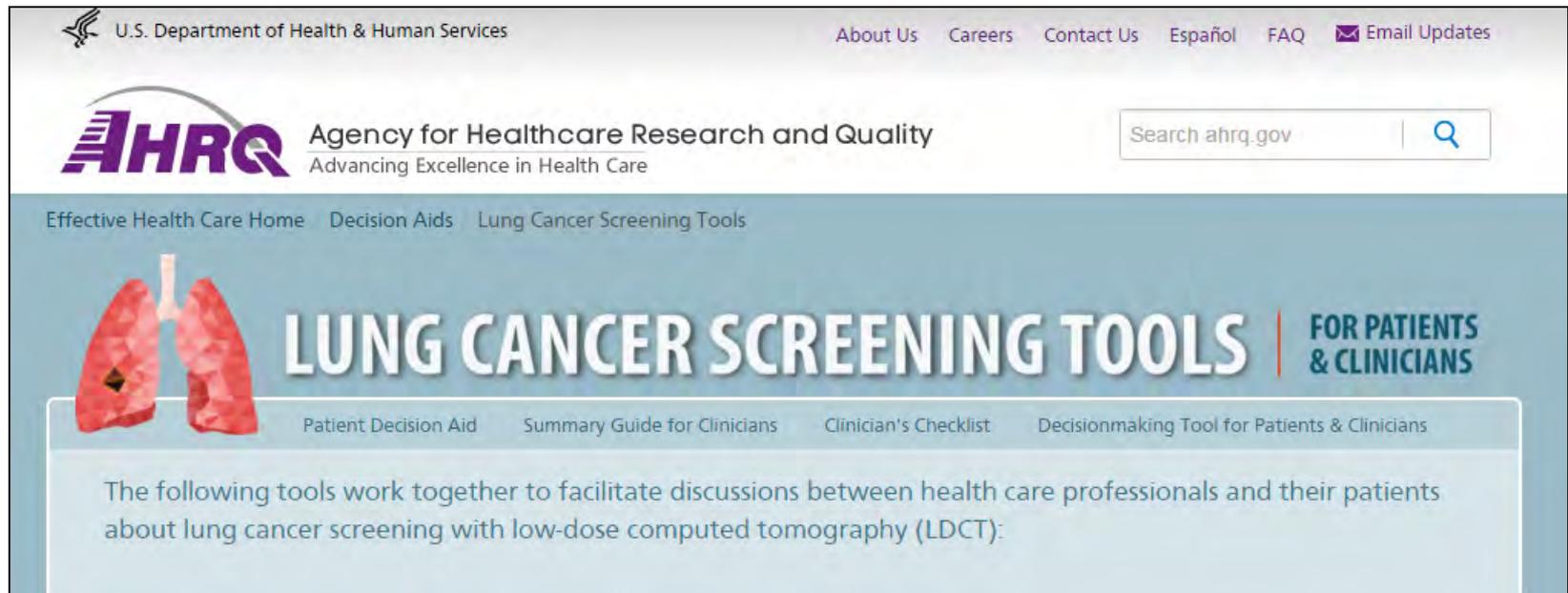
- ▶ Provide clinicians with a concise summary of the current clinical evidence and recommendations.
- ▶ Provide a way to ensure the patient counseling and shared decision making visit is consistent with CMS beneficiary eligibility criteria.
- ▶ A high-quality patient decision aid is needed but not enough.
- ▶ Create decision support tools in multiple formats and for use in multiple ways to support deliberation between patients and clinicians.

Implementation needs of primary care clinicians



- ▶ Clarity about the guidelines/recommendations
 - Eligibility, when to start/stop
- ▶ Clarity about insurance/Medicare coverage
 - Who pays for what?
- ▶ Finding screening centers for referral
 - Where to send interested/eligible patients?
- ▶ Patient educational tools/decision aids
- ▶ Integrating screening programs with EHRs
- ▶ Training for clinic staff in implementation
- ▶ Toolkits to help with implementation

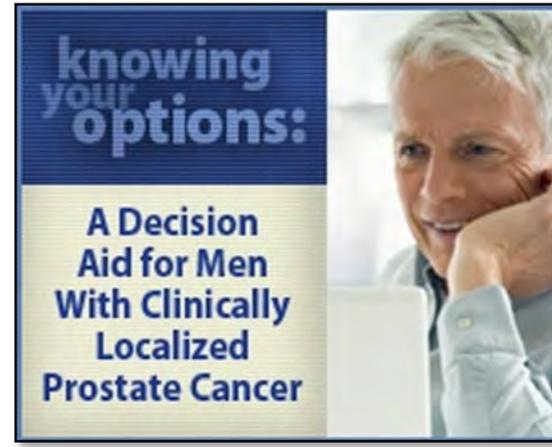
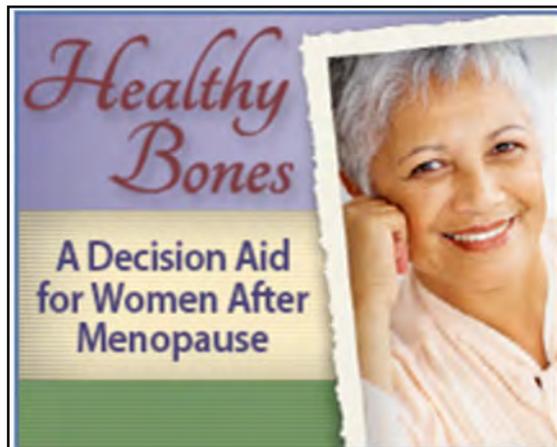
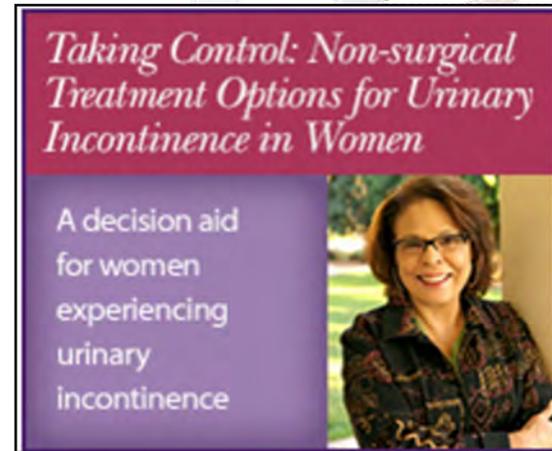
Released March 2016



The image shows a screenshot of the AHRQ website. At the top, there is a navigation bar with links for 'About Us', 'Careers', 'Contact Us', 'Español', 'FAQ', and 'Email Updates'. The AHRQ logo is prominently displayed on the left, with the text 'Agency for Healthcare Research and Quality' and 'Advancing Excellence in Health Care' below it. A search bar is located on the right side of the header. Below the header, there is a breadcrumb trail: 'Effective Health Care Home > Decision Aids > Lung Cancer Screening Tools'. The main content area features a large graphic of human lungs with a small black spot on the left lung, indicating cancer. To the right of the lungs, the text 'LUNG CANCER SCREENING TOOLS' is written in large, bold, white letters, followed by 'FOR PATIENTS & CLINICIANS' in smaller, bold, white letters. Below this, there is a horizontal menu with four items: 'Patient Decision Aid', 'Summary Guide for Clinicians', 'Clinician's Checklist', and 'Decisionmaking Tool for Patients & Clinicians'. At the bottom of the banner, a text box states: 'The following tools work together to facilitate discussions between health care professionals and their patients about lung cancer screening with low-dose computed tomography (LDCT):'

<https://www.effectivehealthcare.ahrq.gov/tools-and-resources/patient-decision-aids/lung-cancer-screening/>

AHRQ: Effective Health Care Program patient decision aids



Components of lung cancer screening tools

For Primary Care Clinicians



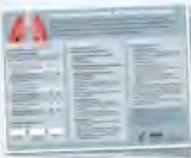
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Lung Cancer Screening: A Summary Guide for Primary Care Clinicians

- » To be used by the health care professional in preparation for a shared decisionmaking visit regarding lung cancer screening with LDCT
- » Provides an overview of lung cancer screening according to the recommendations from the U.S. Preventive Services Task Force on screening for lung cancer
- » Reviews the new eligibility criteria for lung cancer screening with LDCT for Medicare beneficiaries and people with private health insurance
- » Presents evidence about the potential benefits and harms of screening with LDCT

AHRQ Publication No. 16-EHC007-10



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Lung Cancer Screening: A Clinician's Checklist

- » To be used by the health care team during and after the shared decisionmaking visit
- » Provides step-by-step guidance on meeting the beneficiary eligibility requirements for lung cancer screening for people covered by Medicare
- » May also be useful for smokers not covered by Medicare

AHRQ Publication No. 16-EHC007-11

<https://www.effectivehealthcare.ahrq.gov/tools-and-resources/patient-decision-aids/lung-cancer-screening/>

Components of lung cancer screening tools

For Patients



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Is Lung Cancer Screening Right for Me? A Decision Aid for People Considering Lung Cancer Screening With Low-Dose Computed Tomography

- » To be used by the patient before a visit with a health care professional to discuss lung cancer screening
- » Presents information about:
 - » Lung cancer screening
 - » Eligibility for screening
 - » Potential harms and benefits of screening
 - » What is important in making a decision to be screened
 - » Questions to ask a health care professional about screening
 - » Insurance coverage

AHRQ Publication No. 16-EHC007-12

<https://www.effectivehealthcare.ahrq.gov/tools-and-resources/patient-decision-aids/lung-cancer-screening/>

Components of lung cancer screening tools

For Patients and Their Health Care Professionals



Is Lung Cancer Screening Right for Me? A Decisionmaking Tool for You and Your Health Care Professional

- » To be used by the patient and health care professional together during a visit to help guide shared decisionmaking
- » Briefly summarizes the harms and benefits of lung cancer screening, important items in making a decision, and insurance coverage information

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AHRQ Publication No. 16-EHC007-13

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<https://www.effectivehealthcare.ahrq.gov/tools-and-resources/patient-decision-aids/lung-cancer-screening/>

Summary guide for clinicians



Lung Cancer Screening: A Summary Guide for Primary Care Clinicians

Lung Cancer Screening With Low-Dose Computed Tomography (LDCT)

BACKGROUND

Primary care clinicians play a key role in determining the eligibility of patients for lung cancer screening, ensuring patients understand the benefits and harms of lung cancer screening, and working with patients to make decisions about screening that are consistent with the patients' values. Currently, annual screening with low-dose computed tomography (LDCT) is the only recommended screening strategy for lung cancer.

In 2012, lung cancer deaths accounted for about 27 percent of all cancer-related deaths in the United States. The median age at diagnosis was 70 years, and the number of new lung cancer cases was about 59 per 100,000 people. The median age at death was 72 years, and the number of deaths was 47 per 100,000 people. Although early detection and treatment is ideal, only 15 percent of lung cancer cases are diagnosed at an early stage. Smoking is the largest risk factor for lung cancer, causing about 85 percent of lung cancer cases in the United States.

OVERVIEW OF THE EVIDENCE

Published in August 2011, the National Lung Screening Trial (NLST) was the first trial to provide evidence to support screening for lung cancer with LDCT in reducing lung cancer deaths. The NLST randomized 53,454 high-risk individuals aged 55 to 74 years to three annual screenings with LDCT or standard chest x-rays and followed them for a median of 6.5 years. The study found that people were 16 to 20 percent less likely to die from lung cancer when screened with LDCT, as compared with standard screening chest x-rays. The mortality reduction is equivalent to three lung cancer deaths prevented per 1,000 people screened with three annual LDCT screens over 6.5 years. Previous studies had shown that screening with standard chest x-rays does not reduce the mortality rate from lung cancer. An overall reduction in mortality was also observed (about five in 1,000 fewer total deaths for individuals receiving LDCT rather than a chest x-ray).

Important harms of lung cancer screening with LDCT were also observed. These harms included a high number of false-positive scans and the low predictive value

of a positive scan (only about 6 percent of positive scans led to a lung cancer diagnosis). Some people had invasive diagnostic procedures that led to major complications including infection, bleeding in the lung, or a collapsed lung. Radiation exposure from the LDCT screening and higher doses from followup diagnostic imaging studies were also concerns. The harms from cumulative radiation exposure—such as the rate of development of new cancer—are unknown. Concerns have also been raised about overdiagnosis. Data from the NLST trial suggests that 10 to 20 percent of lung carcinomas diagnosed by LDCT might have never been detected in the patient's lifetime in the absence of screening. Screening with LDCT also disclosed incidental findings (aortic aneurysms, coronary artery calcifications) and other lung findings (emphysema, bronchiectasis, pulmonary fibrosis, carcinoma tumors). However, the benefits of treating screening-detected findings other than lung cancer are unclear.

INSURANCE COVERAGE

Both private insurers and Medicare offer coverage for annual LDCT screening for lung cancer among eligible high-risk individuals who meet all the eligibility criteria. (See Eligibility Criteria for Lung Cancer Screening table.) Private insurance plans and Medicare cover lung cancer screening with no out-of-pocket costs.

Followup invasive diagnostic procedures and repeat imaging to evaluate an abnormal screening test may require out-of-pocket costs.

ELIGIBILITY CRITERIA FOR LUNG CANCER SCREENING

Criteria according to:	USPSTF	CMS*
Relevant group:	Persons with private health insurance	Medicare beneficiaries
Age (years):	55–80	55–77
Smoking status:	Current or former ^b smoker	
Smoking history:	30 pack-years ^c	
Lung cancer signs:	Asymptomatic (no signs of lung cancer)	
Screening frequency:	Yearly	
When to stop screening:	The patient exceeds upper age criterion, has not smoked for more than 15 years, and/or develops a health problem that substantially limits life expectancy or the ability or willingness to have curative surgery	

CMS = Centers for Medicare & Medicaid Services; USPSTF = U.S. Preventive Services Task Force

*CMS requires that the beneficiary receive a written order for LDCT by a physician or nonphysician practitioner, as outlined in CMS policies for initial or subsequent LDCT lung cancer screening.

^bFormer smokers must have quit within the last 15 years.

^c[Number of pack-years] = [Average number of packs smoked per day] X [Years smoked] (Note there are 20 cigarettes in 1 pack.)



SUMMARY OF THE EVIDENCE FROM THE NATIONAL LUNG SCREENING TRIAL*

Benefits: How did LDCT scans compare with chest x-rays in reducing deaths from lung cancer per 1,000 people screened?

	LDCT	Chest x-ray
Deaths from lung cancer over 6.5-year followup period	18 in 1,000	21 in 1,000
Deaths from all causes over 6.5-year followup period	70 in 1,000	75 in 1,000

3 in 1,000 fewer deaths from lung cancer with LDCT
5 in 1,000 fewer deaths from all causes with LDCT

*About the NLST: more than 50,000 smokers participated; participants had up to three annual screenings; average followup was 6.5 years.

Harms: What are the harms of screening for lung cancer with LDCT?

	Of 1,000 people screened
Positive (abnormal) results	380
False positives ("false alarms")	356 (about 94%)
Invasive diagnostic procedures (among people with a false positive result)	18
Major complications from invasive diagnostic procedures (e.g., infection, bleeding in lung, collapsed lung)	0.4

Overdiagnosis (diagnosed lung cancer that never would have progressed to cause the patient harm)
= Estimated at 10–20 percent of lung cancer cases diagnosed with LDCT.

Radiation exposure (from screening and diagnostic imaging, including cumulative exposure)
= Harms of repeated exposure to radiation from LDCT and diagnostic imaging, such as causing new cancer, are unknown.

Comparing sources of radiation exposure with a single LDCT scan:	
Air travel, 10 hours	0.04 mSv
Chest x-ray	0.1 mSv
Screening mammogram	0.4 mSv
LDCT scan	1.4 mSv
Average background radiation in the United States (1 year)	3.0–5.0 mSv
Diagnostic CT	7.0 mSv

mSv = millisievert, a measure of the amount of radiation absorbed by the body.

SMOKING CESSATION RESOURCES

BeTobaccoFree.gov (U.S. Department of Health and Human Services)
tinyurl.com/ap657ca

Smoking Quitline: 1-877-448-7848

Smoking & Tobacco Use (Centers for Disease Control and Prevention)
tinyurl.com/ya5jhl
Smoking Quitline: 1-800-784-8669

Help for Smokers and Other Tobacco Users (Agency for Healthcare Research and Quality)
tinyurl.com/owj6Rb4

Smokefree.gov (U.S. Department of Health and Human Services)
smokefree.gov/ready-to-quit

BENEFICIARY REQUIREMENTS FROM CMS

Initial LDCT Lung Cancer Screening Service: The beneficiary must receive a written order for LDCT screening during a lung cancer screening counseling and shared decisionmaking visit with a physician or qualified nonphysician practitioner. The initial screening visit must meet the following criteria and must be appropriately documented in the beneficiary's medical record to be covered by Medicare.

- Must be a shared decisionmaking visit. Use one or more decision aids, and include discussion of the potential benefits and harms of screening, such as the possibility of followup diagnostic testing, the risk of overdiagnosis, the false-positive rate, and total radiation exposure.

Shared decisionmaking is a communication process in which practitioners discuss options and work collaboratively with patients toward preference-based decisions.

- Must include counseling on the importance of adherence to annual lung cancer LDCT screening, the impact of comorbidities on the likelihood of being able to benefit from screening due to the ability to undergo treatment, and willingness to undergo diagnosis and treatment.

- Must include counseling on the importance of not smoking for current and former smokers, and must provide information on tobacco cessation interventions.

Subsequent LDCT Lung Cancer Screening Service: Although not required, a physician or qualified nonphysician practitioner may choose to provide a counseling and shared decisionmaking visit for subsequent screenings. The components of the visit are the same as those for the initial visit.

- The patient must receive a written order for LDCT screening during any visit.

Written orders for both initial and subsequent LDCT lung cancer screenings must contain the following information and be appropriately documented in the beneficiary's medical record:

- Beneficiary date of birth
- Actual pack-year smoking history (number)
- Current smoking status, and for former smokers, the number of years since quitting
- Statement that the beneficiary is asymptomatic
- National Provider Identifier (NPI) of the ordering practitioner



To locate accredited imaging facilities go to www.cms.gov/Medicare/Medicare-General-Information/MedicareApprovedFacilities/Lung-Cancer-Screening-Registries.html.

POINTS TO DISCUSS WITH YOUR PATIENTS

- LDCT is the only recommended screening approach for lung cancer.
- Screening is not a substitute for quitting smoking. The most important way to lower the chance of dying from lung cancer is to stop 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.
- Review the evidence about the benefits and harms of screening with your patient.

Summary guide for clinicians

ELIGIBILITY CRITERIA FOR LUNG CANCER SCREENING

Criteria according to:	USPSTF	CMS ^a
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Screening frequency:	Yearly	
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CMS = Centers for Medicare & Medicaid Services; USPSTF = U.S. Preventive Services Task Force

^a CMS requires that the beneficiary receive a written order for LDCT by a physician or nonphysician practitioner, as outlined in CMS policies for initial or subsequent LDCT lung cancer screening.

^b Former smokers must have quit within the last 15 years.

^c [Number of pack-years = (Average number of packs smoked per day) X (Years smoked)] Note there are 20 cigarettes in 1 pack.

BACKGROUND
Primary determinants of lung cancer risk are age, low-dose CT scan, and treatment. In 2012, for about 100,000 people, 72 years of age per 100,000 and lung cancer stage. Smoking lung cancer

ELIGIBILITY CRITERIA FOR LUNG CANCER SCREENING

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Smoking status:	Current or former ^b smoker	
Smoking history:	30 pack-years ^c	
Lung cancer signs:	Asymptomatic (no signs of lung cancer)	
Screening frequency:	Yearly	
When to stop screening:	The patient exceeds upper age criterion, has not smoked for more than 15 years, and/or develops a health problem that substantially limits life expectancy or the ability or willingness to have curative surgery	

CMS = Centers for Medicare & Medicaid Services; USPSTF = U.S. Preventive Services Task Force

^a CMS requires that the beneficiary receive a written order for LDCT by a physician or nonphysician practitioner, as outlined in CMS policies for initial or subsequent LDCT lung cancer screening.

^b Former smokers must have quit within the last 15 years.

^c [Number of pack-years = (Average number of packs smoked per day) X (Years smoked)] Note there are 20 cigarettes in 1 pack.

INSURANCE COVERAGE

Both private insurers and Medicare offer coverage for annual LDCT screening for lung cancer among eligible high-risk individuals who meet all the eligibility criteria. (See Eligibility Criteria For Lung Cancer Screening table). Private insurance plans and Medicare cover lung cancer screening with no out-of-pocket costs.

Followup invasive diagnostic procedures and repeat imaging to evaluate an abnormal screening test may require out-of-pocket costs.



Chest x-ray	0.04 mSv
Screening mammogram	0.1 mSv
LDCT scan	0.4 mSv
Average background radiation in the United States (1 year)	1.4 mSv
Diagnostic CT	3.0–5.0 mSv
Diagnostic CT	7.0 mSv

mSv = millisievert, a measure of the amount of radiation absorbed by the body.

SMOKING CESSATION RESOURCES

BeTobaccoFree.gov (U.S. Department of Health and Human Services)
tinyurl.com/ap657cz

Smoking Quitline: 1-877-448-7848

Smoking & Tobacco Use (Centers for Disease Control and Prevention)

tinyurl.com/ya5jvl

Smoking Quitline: 1-800-784-8669

Help for Smokers and Other Tobacco Users (Agency for Healthcare Research and Quality)

tinyurl.com/owj68h4

Smokefree.gov (U.S. Department of Health and Human Services)

smokefree.gov/ready-to-quit

COMPARISON FROM THE NATIONAL

Compare with chest x-rays in per 1,000 people screened?

Chest X-ray	LDCT
21 in 1,000	3 in 1,000 fewer deaths from lung cancer with LDCT
75 in 1,000	5 in 1,000 fewer deaths from all causes with LDCT

Estimated; participants had up to three annual

screening for lung cancer

Of 1,000 people screened	LDCT
380	356 (about 94%)
18	0.4

Screening for lung cancer (patient harm) cancer cases diagnosed with LDCT, and diagnostic imaging.

Screening from LDCT and diagnostic imaging, are unknown.

Exposure with a single LDCT scan:	0.04 mSv
Screening mammogram	0.1 mSv
LDCT scan	0.4 mSv
Average background radiation in the United States (1 year)	1.4 mSv
Diagnostic CT	3.0–5.0 mSv
Diagnostic CT	7.0 mSv

mSv = millisievert, a measure of the amount of radiation absorbed by the body.

BENEFICIARY REQUIREMENTS FROM CMS

Initial LDCT Lung Cancer Screening Service: The beneficiary must receive a written order for LDCT screening during a lung cancer screening counseling and shared decisionmaking visit with a physician or qualified nonphysician practitioner. The initial screening visit must meet the following criteria and must be appropriately documented in the beneficiary's medical record to be covered by Medicare.

- Must be a shared decisionmaking visit. Use one or more decision aids, and include discussion of the potential benefits and harms of screening, such as the possibility of followup diagnostic testing, the risk of overdiagnosis, the false-positive rate, and total radiation exposure.

Shared decisionmaking is a communication process in which practitioners discuss options and work collaboratively with patients toward preference-based decisions.

- Must include counseling on the importance of adherence to annual lung cancer LDCT screening, the impact of comorbidities on the likelihood of being able to benefit from screening due to the ability to undergo treatment, and willingness to undergo diagnosis and treatment.

- Must include counseling on the importance of not smoking for current and former smokers, and must provide information on tobacco cessation interventions.

Subsequent LDCT Lung Cancer Screening Service: Although not required, a physician or qualified nonphysician practitioner may choose to provide a counseling and shared decisionmaking visit for subsequent screenings. The components of the visit are the same as those for the initial visit.

- The patient must receive a written order for LDCT screening during any visit.

Written orders for both initial and subsequent LDCT lung cancer screening must contain the following information and be appropriately documented in the beneficiary's medical record:

- Beneficiary date of birth
- Actual pack-year smoking history (number)
- Current smoking status, and for former smokers, the number of years since quitting
- Statement that the beneficiary is asymptomatic
- National Provider Identifier (NPI) of the ordering practitioner



To locate accredited imaging facilities go to www.cms.gov/Medicare/Medicare-General-Information/MedicareApprovedFacilities/Lung-Cancer-Screening-Registries.html.

POINTS TO DISCUSS WITH YOUR PATIENTS

- LDCT is the only recommended screening approach for lung cancer.
- Screening is not a substitute for quitting smoking. The most important way to lower the chance of dying from lung cancer is to stop 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.
- Review the evidence about the benefits and harms of screening with your patients.



AHRQ Publication No. 16-EHC007-10
March 2016

Summary guide for clinicians

ELIGIBILITY CRITERIA FOR LUNG CANCER SCREENING

Criteria according to:	USPSTF	CMS*
Relevant group:	Persons with private	Medicare

SUMMARY OF THE EVIDENCE FROM THE NATIONAL LUNG SCREENING TRIAL*

Benefits: How did LDCT scans compare with chest x-rays in reducing deaths from lung cancer per 1,000 people screened?

	LDCT	Chest x-ray	
Deaths from lung cancer over 6.5-year followup period	18 in 1,000	21 in 1,000	3 in 1,000 fewer deaths from lung cancer with LDCT
Deaths from all causes over 6.5-year followup period	70 in 1,000	75 in 1,000	5 in 1,000 fewer deaths from all causes with LDCT

*About the NLST: more than 50,000 smokers participated; participants had up to three annual screenings; average followup was 6.5 years.

BACKGROUND
Primary of determin lung cancer understand lung cancer patients to that are values. C low-dose is the strategy for In 2012, for about deaths in at diagnos of new la 100,000 pe 72 years, d per 100,00 and treat lung cancer stage. Sm lung cancer

CMS = Centers for Medicare & Medicaid Services
*CMS requires the beneficiary receive a written order for LDCT by a physician or nonphysician practitioner, as outlined in CMS policies for initial or subsequent LDCT lung cancer screening.
†Former smokers must have quit within the last 15 years.
‡[Number of pack-years = (Average number of packs smoked per day) x (Years smoked)] (Note there are 20 cigarettes in 1 pack.)

ELIGIBILITY CRITERIA FOR LUNG CANCER SCREENING

Criteria according to:	USPSTF	CMS*
Relevant group:	Persons with private health insurance	Medicare beneficiaries
Age (years):	55–80	55–77
Smoking status:	Current or former [†] smoker	
Smoking history:	30 pack-years [‡]	
Lung cancer signs:	Asymptomatic (no signs of lung cancer)	
Screening frequency:	Yearly	
When to stop screening:	The patient exceeds upper age criterion, has not smoked for more than 15 years, and/or develops a health problem that substantially limits life expectancy or the ability or willingness to have curative surgery	

CMS = Centers for Medicare & Medicaid Services; USPSTF = U.S. Preventive Services Task Force
*CMS requires that the beneficiary receive a written order for LDCT by a physician or nonphysician practitioner, as outlined in CMS policies for initial or subsequent LDCT lung cancer screening.
†Former smokers must have quit within the last 15 years.
‡[Number of pack-years = (Average number of packs smoked per day) x (Years smoked)] (Note there are 20 cigarettes in 1 pack.)

Both private insurers and Medicare offer coverage for annual LDCT screening for lung cancer among eligible high-risk individuals who meet all the eligibility criteria. (See Eligibility Criteria For Lung Cancer Screening table.) Private insurance plans and Medicare cover lung cancer screening with no out-of-pocket costs.

Followup invasive diagnostic procedures and repeat imaging to evaluate an abnormal screening test may require out-of-pocket costs.



EVIDENCE FROM THE NATIONAL LUNG SCREENING TRIAL*

How did LDCT scans compare with chest x-rays in reducing deaths from lung cancer per 1,000 people screened?

Chest x-ray	LDCT	
21 in 1,000	18 in 1,000	3 in 1,000 fewer deaths from lung cancer with LDCT
75 in 1,000	70 in 1,000	5 in 1,000 fewer deaths from all causes with LDCT

*About the NLST: more than 50,000 smokers participated; participants had up to three annual screenings; average followup was 6.5 years.

SCREENING FREQUENCY

Of 1,000 people screened	Screened	Not Screened
380	356 (about 94%)	24
18	17	1
0.4	0.4	0

Written orders for both initial and subsequent LDCT lung cancer screenings must contain the following information and be appropriately documented in the beneficiary's medical record:

- Beneficiary date of birth
- Actual pack-year smoking history (number)
- Current smoking status, and for former smokers, the number of years since quitting
- Statement that the beneficiary is asymptomatic
- National Provider Identifier (NPI) of the ordering practitioner

BENEFICIARY REQUIREMENTS FROM CMS

Initial LDCT Lung Cancer Screening Service: The beneficiary must receive a written order for LDCT screening during a lung cancer screening counseling and shared decisionmaking visit with a physician or qualified nonphysician practitioner. The initial screening visit must meet the following criteria and must be appropriately documented in the beneficiary's medical record to be covered by Medicare.

- Must be a shared decisionmaking visit, use one or more decision aids, and include discussion of the potential benefits and harms of screening, such as the possibility of follow-up diagnostic testing, the risk of overdiagnosis, the false-positive rate, and total radiation exposure.
- Shared decisionmaking is a communication process in which practitioners discuss options and work collaboratively with patients toward preference-based decisions.

Subsequent LDCT Lung Cancer Screening Service: Although not required, a physician or qualified nonphysician practitioner may choose to provide a counseling and shared decisionmaking visit for subsequent screenings. The components of the visit are the same as those for the initial visit.

- Must include counseling on the importance of adherence to annual lung cancer LDCT screening, the impact of comorbidities on the likelihood of being able to benefit from screening due to the ability to undergo treatment, and willingness to undergo diagnosis and treatment.
- Must include counseling on the importance of not smoking for current and former smokers, and must provide information on tobacco cessation interventions.

Written orders for both initial and subsequent LDCT lung cancer screenings must contain the following information and be appropriately documented in the beneficiary's medical record:

- Beneficiary date of birth
- Actual pack-year smoking history (number)
- Current smoking status, and for former smokers, the number of years since quitting
- Statement that the beneficiary is asymptomatic
- National Provider Identifier (NPI) of the ordering practitioner



To locate accredited imaging facilities, go to www.cms.gov/Medicare/Medicare-General-Information/Medicare-Approved-Facilities/Lung-Cancer-Screening-Registries.html.

Screening mammogram	0.04 mSv
LDCT scan	0.1 mSv
Average background radiation in the United States (1 year)	0.4 mSv
Diagnostic CT	1.4 mSv
	3.0–5.0 mSv
	7.0 mSv

mSv = millisievert, a measure of the amount of radiation absorbed by the body.

SMOKING CESSATION RESOURCES

BeTobaccoFree.gov (U.S. Department of Health and Human Services)
tinyurl.com/ap657cz
Smoking Quitline: 1-877-448-7848

Smoking & Tobacco Use (Centers for Disease Control and Prevention)
tinyurl.com/ya5jvlv
Smoking Quitline: 1-800-784-8669

Help for Smokers and Other Tobacco Users (Agency for Healthcare Research and Quality)
tinyurl.com/awj68h4

Smokefree.gov (U.S. Department of Health and Human Services)
smokefree.gov/ready-to-quit

POINTS TO DISCUSS WITH YOUR PATIENTS

- LDCT is the only recommended screening approach for lung cancer.
- Screening is not a substitute for quitting smoking. The most important way to lower the chance of dying from lung cancer is to stop 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.
- Review the evidence about the benefits and harms of screening with your patient.

Summary guide for clinicians

ELIGIBILITY CRITERIA FOR LUNG CANCER SCREENING

Criteria according to:	USPSTF	CMS*
Relevant group:	Persons with private health insurance	Medicare beneficiaries

SUMMARY OF LUNG SCREENING

Benefits: Halving deaths from lung cancer over 10 years of followup period

Deaths from cancer over 10 years of followup period

Deaths from causes other than lung cancer over 10 years of followup period

Deaths from causes other than lung cancer over 10 years of followup period

Harms: What are the harms of screening for lung cancer with LDCT?

	Of 1,000 people screened
Positive (abnormal) results	380
False positives ("false alarms")	356 (about 94%)
Invasive diagnostic procedures (among people with a false positive result)	18
Major complications from invasive diagnostic procedures (e.g., infection, bleeding in lung, collapsed lung)	0.4
Overdiagnosis (diagnosed lung cancer that never would have progressed to cause the patient harm)	10-20 percent of lung cancer cases diagnosed with LDCT.
Radiation exposure (from screening and diagnostic imaging, including cumulative exposure)	Harms of repeated exposure to radiation from LDCT and diagnostic imaging, such as causing new cancer, are unknown.
Comparing sources of radiation exposure with a single LDCT scan:	
Air travel, 10 hours	0.04 mSv
Chest x-ray	0.1 mSv
Screening mammogram	0.4 mSv
LDCT scan	1.4 mSv
Average background radiation in the United States (1 year)	3.0-5.0 mSv
Diagnostic CT	7.0 mSv

mSv = millisievert, a measure of the amount of radiation absorbed by the body.

BACKGROUND: Primary cause of death in the United States. In 2012, for about 160,000 people at diagnosis of new lung cancer, 100,000 people died. For 72 years, a low-dose CT scan can detect lung cancer at an early stage. Smoking is the leading cause of lung cancer.

CMS = Centers for Medicare & Medicaid Services
 *CMS requires that the beneficiary receive a written order for LDCT by a physician or nonphysician practitioner.
 †Former smokers must have quit within the last 15 years.
 ‡[Number of pack-years = (Average number of packs smoked per day) X (Years smoked)] Note there are 20 cigarettes in a pack.

ELIGIBILITY CRITERIA FOR LUNG CANCER SCREENING

Criteria according to:	USPSTF	CMS*
Relevant group:	Persons with private health insurance	Medicare beneficiaries
Age (years):	55-80	55-80
Smoking status:	Current or former* smoker	Current or former* smoker
Smoking history:	30 pack-years†	30 pack-years†
Lung cancer signs:	Asymptomatic (no signs of lung cancer)	Asymptomatic (no signs of lung cancer)
Screening frequency:	Yearly	Yearly
When to stop screening:	The patient exceeds upper age criterion, has a health problem that substantially limits the ability or willingness to have curative surgery, or has a life expectancy of less than 3 years.	The patient exceeds upper age criterion, has a health problem that substantially limits the ability or willingness to have curative surgery, or has a life expectancy of less than 3 years.

CMS = Centers for Medicare & Medicaid Services; USPSTF = U.S. Preventive Services Task Force
 *CMS requires that the beneficiary receive a written order for LDCT by a physician or nonphysician practitioner.
 †Number of pack-years = (Average number of packs smoked per day) X (Years smoked) Note there are 20 cigarettes in a pack.

COMPARISON WITH CHEST X-RAYS

Number of people screened	Deaths from lung cancer	Deaths from causes other than lung cancer
100	3 in 1,000 fewer deaths from lung cancer with LDCT	5 in 1,000 fewer deaths from all causes with LDCT
1,000 people screened	380	356 (about 94%)
	18	0.4

BENEFICIARY REQUIREMENTS FROM CMS

Initial LDCT Lung Cancer Screening Service: The beneficiary must receive a written order for LDCT screening during a lung cancer screening counseling and shared decisionmaking visit with a physician or qualified nonphysician practitioner. The initial screening visit must meet the following criteria and must be appropriately documented in the beneficiary's medical record to be covered by Medicare.

- Must be a shared decisionmaking visit. Use one or more decision aids, and include discussion of the potential benefits and harms of screening, such as the possibility of followup diagnostic testing, the risk of overdiagnosis, the false-positive rate, and total radiation exposure.
- Shared decisionmaking is a communication process in which practitioners discuss options and work collaboratively with patients toward preference-based decisions.
- Must include counseling on the importance of adherence to annual lung cancer LDCT screening, the impact of comorbidities on the likelihood of being able to benefit from screening due to the ability to undergo treatment, and willingness to undergo diagnosis and treatment.
- Must include counseling on the importance of not smoking for current and former smokers, and must provide information on tobacco cessation interventions.

Subsequent LDCT Lung Cancer Screening Service: Although not required, a physician or qualified nonphysician practitioner may choose to provide a counseling and shared decisionmaking visit for subsequent screenings. The components of the visit are the same as those for the initial visit.

- The patient must receive a written order for LDCT screening during any visit.

Written orders for both initial and subsequent LDCT lung cancer screenings must contain the following information and be appropriately documented in the beneficiary's medical record:

- Beneficiary date of birth
- Actual pack-year smoking history (number)
- Current smoking status, and for former smokers, the number of years since quitting
- Statement that the beneficiary is asymptomatic
- National Provider Identifier (NPI) of the ordering practitioner



To locate accredited imaging facilities go to www.cms.gov/Medicare/Medicare-General-Information/Medicare-Approved-Facilities/Lung-Cancer-Screening-Registries.html.

POINTS TO DISCUSS WITH YOUR PATIENTS

- LDCT is the only recommended screening approach for lung cancer.
- Screening is not a substitute for quitting smoking. The most important way to lower the chance of dying from lung cancer is to stop 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.
- Review the evidence about the benefits and harms of screening with your patient.



AHRQ Publication No. 16-EHC007-10
 March 2016

Summary guide for clinicians

ELIGIBILITY CRITERIA FOR LUNG CANCER SCREENING

Criteria according to:	USPSTF	CMS*
Relevant group:	Persons with private health insurance	Medicare

SUMMARY OF LUNG SCREENING

Benefits: Halving deaths from lung cancer by reducing deaths from lung cancer over 10 years of followup period.

Deaths from lung cancer over 10 years of followup period

Deaths from lung cancer causes over 10 years of followup period

*About the NLST: 10,000 people screened; average

Harms: What are the harms of screening for lung cancer with LDCT?

Of 1,000 people screened

Positive (true) results

False positive results

Invasive diagnostic procedures

Major diagnostic complications

Overdiagnosis

Overdiagnosis would have no effect on survival

Estimated at 10-20 percent of lung cancer cases diagnosed with LDCT.

Radiation exposure (from screening and diagnostic imaging, including cumulative exposure)

» Harms of repeated exposure to radiation from LDCT and diagnostic imaging, such as causing new cancer, are unknown.

Comparing sources of radiation exposure with a single LDCT scan:

Air travel, 10 hours	0.04 mSv
Chest x-ray	0.1 mSv
Screening mammogram	0.4 mSv
LDCT scan	1.4 mSv
Average background radiation in the United States (1 year)	3.0-5.0 mSv
Diagnostic CT	7.0 mSv

mSv = millisievert, a measure of the amount of radiation absorbed by the body.



To locate accredited imaging facilities go to www.cms.gov/Medicare/Medicare-General-Information/MedicareApprovedFacilities/Lung-Cancer-Screening-Registries.html.

BACKGROUND: Primary cause of death from lung cancer. In 2012, about 160,000 people died from lung cancer. In 2012, about 160,000 people died from lung cancer. In 2012, about 160,000 people died from lung cancer.

CMS = Centers for Medicare & Medicaid Services. USPSTF = U.S. Preventive Services Task Force. *CMS requires that the beneficiary receive a written order for LDCT by a physician or nonphysician practitioner. CMS policies for initial or subsequent LDCT lung cancer screening. †Former smokers must have quit within the last 15 years. ‡(Number of pack-years = (Average number of packs smoked per day) X (Years smoked)) Note that there are 20 cigarettes in a pack.

ELIGIBILITY CRITERIA FOR LUNG CANCER SCREENING

Criteria according to:	USPSTF	CMS*
Relevant group:	Persons with private health insurance	Medicare
Age (years):	55-80	55-80
Smoking status:	Current or former [†] smoker	Current or former [†] smoker
Smoking history:	30 pack-years [‡]	30 pack-years [‡]
Lung cancer signs:	Asymptomatic (no signs of lung cancer)	Asymptomatic (no signs of lung cancer)
Screening frequency:	Yearly	Yearly
When to stop screening:	The patient exceeds upper age criterion for more than 15 years, and/or has a health problem that substantially limits or the ability or willingness to have curative treatment	The patient exceeds upper age criterion for more than 15 years, and/or has a health problem that substantially limits or the ability or willingness to have curative treatment

CMS = Centers for Medicare & Medicaid Services; USPSTF = U.S. Preventive Services Task Force. *CMS requires that the beneficiary receive a written order for LDCT by a physician or nonphysician practitioner. CMS policies for initial or subsequent LDCT lung cancer screening. †Former smokers must have quit within the last 15 years. ‡(Number of pack-years = (Average number of packs smoked per day) X (Years smoked)) Note that there are 20 cigarettes in a pack.

COMPARISON WITH CHEST X-RAYS

Of 1,000 people screened?

3 in 1,000 fewer deaths from lung cancer with LDCT
5 in 1,000 fewer deaths from all causes with LDCT

BENEFICIARY REQUIREMENTS FROM CMS

Initial LDCT Lung Cancer Screening Service: The beneficiary must receive a written order for LDCT screening during a lung cancer screening counseling and shared decisionmaking visit with a physician or qualified nonphysician practitioner. The initial screening visit must meet the following criteria and must be appropriately documented in the beneficiary's medical record to be covered by Medicare.

- Must be a shared decisionmaking visit. Use one or more decision aids, and include discussion of the potential benefits and harms of screening, such as the possibility of followup diagnostic testing, the risk of overdiagnosis, the false-positive rate, and total radiation exposure.
- Shared decisionmaking is a communication process in which practitioners discuss options and work collaboratively with patients toward preference-based decisions.

Actual pack-year smoking history (number)

- Current smoking status, and for former smokers, the number of years since quitting
- Statement that the beneficiary is asymptomatic
- National Provider Identifier (NPI) of the ordering practitioner

To locate accredited imaging facilities go to www.cms.gov/Medicare/Medicare-General-Information/MedicareApprovedFacilities/Lung-Cancer-Screening-Registries.html.

POINTS TO DISCUSS WITH YOUR PATIENTS

- LDCT is the only recommended screening approach for lung cancer.
- Screening is not a substitute for quitting smoking. The most important way to lower the chance of dying from lung cancer is to stop 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.
- Review the evidence about the benefits and harms of screening with your patient.

Summary guide for clinicians

ELIGIBILITY CRITERIA FOR LUNG CANCER SCREENING

Criteria according to:	USPSTF	CMS*
Relevant groups:	Persons with private health insurance	Medicare

SUMMARY OF LUNG SCREENING

Benefits: Halving deaths from lung cancer by reducing deaths from lung cancer.

Deaths from lung cancer over 10 years of followup per 1,000 people screened

Deaths from causes other than lung cancer over 10 years of followup per 1,000 people screened

*About the NLST: 100,000 people screened; average age 67 years.

Harms: What are the harms of screening for lung cancer with LDCT?

Positive (true) results
False positive results
Invasive diagnostic procedures
Major diagnostic procedures
Bleeding

Overdiagnosis would have been detected

Radiation exposure including cumulative exposure
Harms of repeated imaging, such as

Comparing sources of radiation
Air travel, 10 hours
Chest x-ray
Screening mammogram
LDCT scan
Average background radiation
Diagnostic CT

Of 1,000 people screened

COMPARISON FROM THE NATIONAL LUNG SCREENING TRIAL

Compare with chest x-rays in 100 people screened?	LDCT	Chest x-ray
3 in 1,000 fewer deaths from lung cancer with LDCT	3	6
5 in 1,000 fewer deaths from all causes with LDCT	5	10

BENEFICIARY REQUIREMENTS FROM CMS

Initial LDCT Lung Cancer Screening Service: The beneficiary must receive a written order for LDCT screening during a lung cancer screening counseling and shared decisionmaking visit with a physician or qualified nonphysician practitioner. The initial screening visit must meet the following criteria and must be appropriately documented in the beneficiary's medical record to be covered by Medicare.

- Must be a shared decisionmaking visit, use one or more decision aids, and include discussion of the potential benefits and harms of screening, such as the possibility of followup diagnostic testing, the risk of overdiagnosis, the false-positive rate, and total radiation exposure.
- Shared decisionmaking is a communication process in which practitioners discuss options and work collaboratively with patients toward preference-based decisions.

annual lung cancer screening likelihood to undergo screening. Smoking for 10 or more years on tobacco products. Not required, but to provide a written order for the screening. The order must be documented in the beneficiary's medical record.

the number of years since the beneficiary last smoked. The practitioner must go to www.cms.gov/medicare/coverage/coverage-information/coverage-policies.html.

PATIENTS must be at least 55 years old for lung cancer screening. The most important criterion is to stop smoking. A patient no longer needs to meet the criteria. These criteria do not necessarily mean a diagnosis. The harms of screening with LDCT are small.

BACKGROUND Primary cause of death in the United States. Lung cancer is the leading cause of cancer death among men and women. Lung cancer screening can reduce the number of deaths from lung cancer. In 2012, about 160,000 people died from lung cancer. About 160,000 people are diagnosed with lung cancer each year. About 160,000 people die from lung cancer each year. Smoking is the leading cause of lung cancer.

CMS = Centers for Medicare & Medicaid Services
*CMS requires that the beneficiary receive a written order for LDCT by a physician or nonphysician practitioner.
†Former smokers must have quit within the last 15 years.
‡[Number of pack-years = (Average number of packs smoked per day) X (Years smoked)] Note there are 20 cigarettes in a pack.

ELIGIBILITY CRITERIA FOR LUNG CANCER SCREENING

Criteria according to:	USPSTF	CMS*
Relevant groups:	Persons with private health insurance	Medicare
Age (years):	55-80	50-80
Smoking status:	Current or former† smoker	Current or former† smoker
Smoking history:	30 pack-years‡	20 pack-years‡
Lung cancer signs:	Asymptomatic (no signs of lung cancer)	Asymptomatic (no signs of lung cancer)
Screening frequency:	Yearly	Yearly
When to stop screening:	The patient exceeds upper age criterion, has smoked for more than 15 years, and/or has a health problem that substantially limits life expectancy or the ability or willingness to have curative lung cancer treatment.	The patient exceeds upper age criterion, has smoked for more than 15 years, and/or has a health problem that substantially limits life expectancy or the ability or willingness to have curative lung cancer treatment.

CMS = Centers for Medicare & Medicaid Services; USPSTF = U.S. Preventive Services Task Force
*CMS requires that the beneficiary receive a written order for LDCT by a physician or nonphysician practitioner.
†Former smokers must have quit within the last 15 years.
‡[Number of pack-years = (Average number of packs smoked per day) X (Years smoked)] Note there are 20 cigarettes in a pack.

mSv = millisievert, a measure of the amount of radiation absorbed by the body.

SMOKING CESSATION RESOURCES

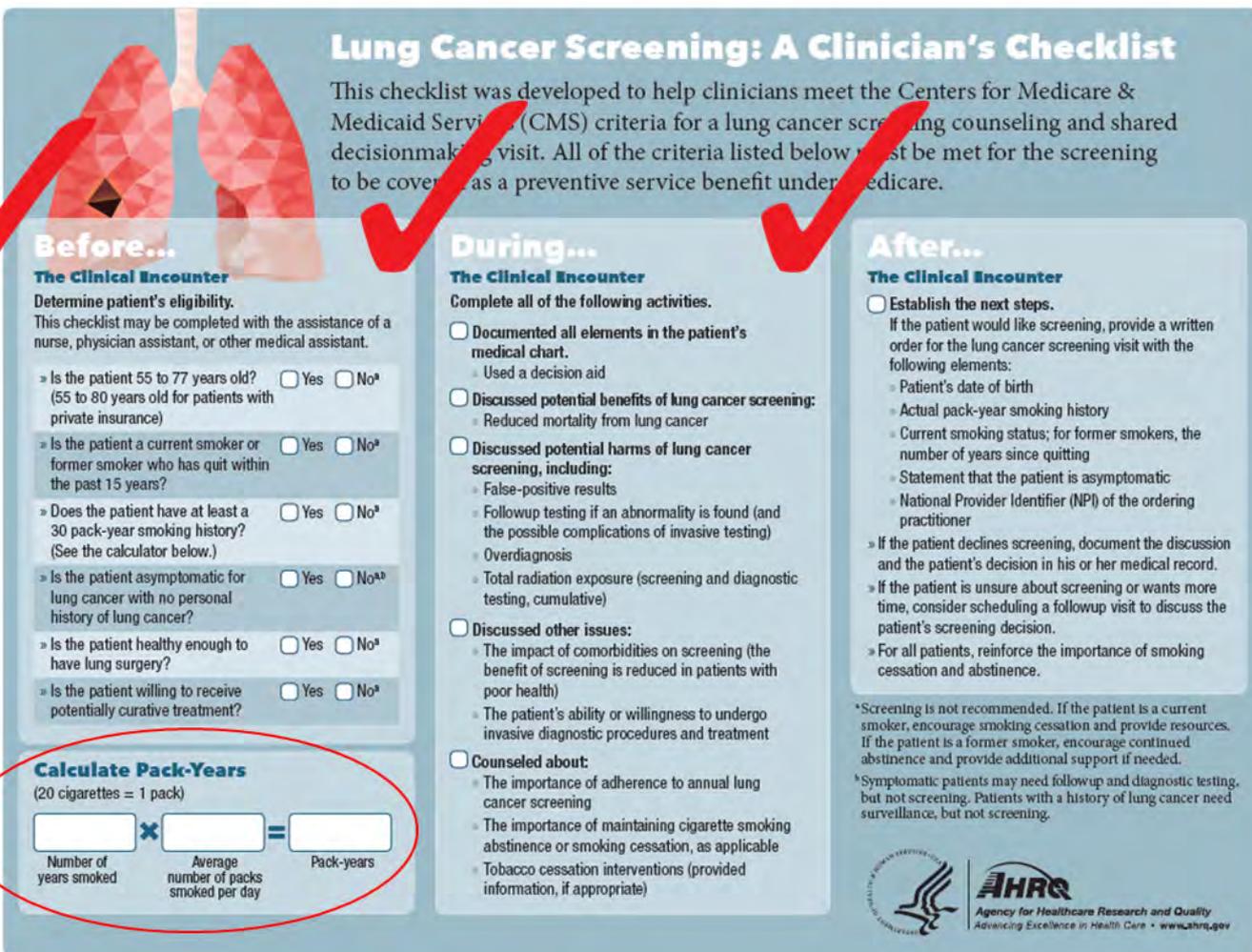
BeTobaccoFree.gov (U.S. Department of Health and Human Services)
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Smoking & Tobacco Use (Centers for Disease Control and Prevention)
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Help for Smokers and Other Tobacco Users (Agency for Healthcare Research and Quality)
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smokefree.gov/ready-to-quit

A clinician's checklist



Lung Cancer Screening: A Clinician's Checklist

This checklist was developed to help clinicians meet the Centers for Medicare & Medicaid Services (CMS) criteria for a lung cancer screening counseling and shared decisionmaking visit. All of the criteria listed below must be met for the screening to be covered as a preventive service benefit under Medicare.

Before... The Clinical Encounter

Determine patient's eligibility.
This checklist may be completed with the assistance of a nurse, physician assistant, or other medical assistant.

- » Is the patient 55 to 77 years old? Yes No^a
(55 to 80 years old for patients with private insurance)
- » Is the patient a current smoker or former smoker who has quit within the past 15 years? Yes No^a
- » Does the patient have at least a 30 pack-year smoking history? (See the calculator below.) Yes No^a
- » Is the patient asymptomatic for lung cancer with no personal history of lung cancer? Yes No^{a,b}
- » Is the patient healthy enough to have lung surgery? Yes No^a
- » Is the patient willing to receive potentially curative treatment? Yes No^a

Calculate Pack-Years
(20 cigarettes = 1 pack)

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

During... The Clinical Encounter

Complete all of the following activities.

- Documented all elements in the patient's medical chart.
 - » Used a decision aid
- Discussed potential benefits of lung cancer screening:
 - » Reduced mortality from lung cancer
- Discussed potential harms of lung cancer screening, including:
 - » False-positive results
 - » Followup testing if an abnormality is found (and the possible complications of invasive testing)
 - » Overdiagnosis
 - » Total radiation exposure (screening and diagnostic testing, cumulative)
- Discussed other issues:
 - » The impact of comorbidities on screening (the benefit of screening is reduced in patients with poor health)
 - » The patient's ability or willingness to undergo invasive diagnostic procedures and treatment
- Counseled about:
 - » The importance of adherence to annual lung cancer screening
 - » The importance of maintaining cigarette smoking abstinence or smoking cessation, as applicable
 - » Tobacco cessation interventions (provided information, if appropriate)

After... The Clinical Encounter

- Establish the next steps.
If the patient would like screening, provide a written order for the lung cancer screening visit with the following elements:
 - » 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 the patient declines screening, document the discussion and the patient's decision in his or her medical record.
- » If the patient is unsure about screening or wants more time, consider scheduling a followup visit to discuss the patient's screening decision.
- » For all patients, reinforce the importance of smoking cessation and abstinence.

^aScreening is not recommended. If the patient is a current smoker, encourage smoking cessation and provide resources. If the patient is a former smoker, encourage continued abstinence and provide additional support if needed.

^bSymptomatic patients may need followup and diagnostic testing, but not screening. Patients with a history of lung cancer need surveillance, but not screening.



A clinician's checklist

Before...

The Clinical Encounter

Determine patient's eligibility.

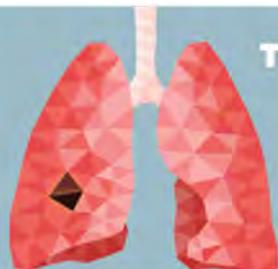
This checklist may be completed with a nurse, physician assistant, or other staff member.

- » Is the patient 55 to 77 years old? (55 to 80 years old for patients with private insurance)
- » Is the patient a current smoker or former smoker who has quit within the past 15 years?
- » Does the patient have at least a 30 pack-year smoking history? (See the calculator below.)
- » Is the patient asymptomatic for lung cancer with no personal history of lung cancer?
- » Is the patient healthy enough to have lung surgery?
- » Is the patient willing to receive potentially curative treatment?

Calculate Pack-Years

(20 cigarettes = 1 pack)

<input type="text"/>	×	<input type="text"/>
Number of years smoked		Average number of packs smoked per day



The importance of shared decisionmaking

Lung cancer screening with low-dose computed tomography (LDCT) reduces mortality from lung cancer. There are also potential harms associated with lung cancer screening, including a high-false positive rate and the associated need for diagnostic followup, known and unknown risks of additional testing associated with incidental findings, cumulative radiation exposure, and overdiagnosis. Shared decisionmaking is a collaborative patient-centered process in which patients and clinicians make decisions together, within the context of the best evidence and recommendations and based on the patient's values and preferences.

Tips To Promote a Shared Decision

Below is a five-step process for shared decisionmaking that includes exploring and comparing the possible benefits and harms of each option through meaningful dialogue about what matters most to the patient.

- STEP 1:** Seek your patient's participation in the decisionmaking process.
- STEP 2:** Help your patient explore and compare the potential benefits and harms of lung cancer screening, and assess your patient's level of understanding. (See the teach-back examples in the box to the far right.)
- STEP 3:** Assess your patient's values and preferences about lung cancer screening.
- STEP 4:** Reach a decision about lung cancer screening with your patient.
- STEP 5:** Evaluate your patient's feelings about the decision by having a followup discussion.

Ordering Information



Lung Cancer Screening with Low-Dose Computed Tomography (LDCT): Tools for Primary Care Clinicians, is a free multicomponent resource to support decisionmaking about lung cancer screening in the primary care setting. For electronic copies of this multicomponent resource, visit www.effectivehealthcare.ahrq.gov/LCS/

Talking Points

Below are specific points to address during the clinical encounter.

- » Lung cancer screening can be effective if patients 1) follow the screening protocol, 2) undergo diagnostic followup procedures after a positive screening result, and 3) receive treatment, which has potential harms.
- » Screening does not mean that smoking is OK. Smoking still causes lung cancer, cardiovascular disease, and other lung disease.
- » Screening can lead to early treatment that can prevent some, but not all, lung cancer deaths.
- » False-positive results ("false alarms") are common, and additional scans or invasive procedures may be needed. Less commonly, major complications of invasive procedures can occur, including bleeding, infection, or a collapsed lung.
- » Lung cancer screening may find lung cancer that would not have ever caused symptoms or harmed the patient in his or her lifetime if the cancer had not been found. This could lead to treatment of people who do not really need treatment.
- » Screening and followup testing exposes patients to radiation. The harms associated with cumulative radiation exposure are unknown.
- » Screening should stop if the patient 1) exceeds the upper age criterion, 2) no longer wants screening, 3) has a worsening health condition that limits their life expectancy or increases the risk of complications from lung surgery, or 4) has not smoked for 15 years.

Teach-Back Examples

"I know I have given you a lot of information. Tell me in your own words what you have heard."

"What are your thoughts about lung cancer screening?"

"Let's stop right there for a moment. What questions or comments do you have about the information I have given you?"

Referral Information

To find a radiology imaging facility that meets the CMS eligibility criteria, please visit:



www.cms.gov/Medicare/Medicare-General-Information/MedicareApprovedFacilities/Lung-Cancer-Screening-Registries.html



AHRQ Publication No. 16-EHC007-11
March 2016

A decision aid for patients



Is Lung Cancer Screening Right for Me?

A decision aid for people screening with low-dose CT

If you have smoked for many years, screening (testing) for lung cancer with low-dose computed tomography (LDCT). Before you decide, it's important to understand the possible benefits and harms of LDCT. This aid will help prepare you to talk about whether lung cancer screening is right for you.

What are the facts about lung cancer?

- Lung cancer is the leading cause of cancer death in the United States. Each year, about 220,000 people are diagnosed with lung cancer and 150,000 people die from lung cancer.
- About half of the people diagnosed with lung cancer are 70 years of age or older. The typical age of death from lung cancer is 72 years.

Who should be screened for lung cancer?

The United States Preventive Services Task Force (USPSTF) is made up of experts in preventive medicine. Without pay, they review the current research to make recommendations about clinical preventive services such as screening, counseling, and preventive medications.

The USPSTF recommends lung cancer screening for individuals who:

- Are 55 to 80 years old
- Do not have any signs or symptoms of lung cancer (diagnostic testing may be recommended for people who do have signs or symptoms of lung cancer)
- Have not had lung cancer before
- Currently smoke or quit less than 15 years ago
- Are or were heavy smokers (30 pack-years. History such as those who smoked 1 pack per day for 30 years or 2 packs per day for 15 years)

The USPSTF does not recommend lung cancer screening for individuals who:

- Have a condition that greatly limits how long they may live
- Are not willing to have surgery for lung cancer

What is lung cancer?

Lung cancer happens when abnormal cells grow out of control. These cells can form a tumor. Lung cancer is often diagnosed once it has spread after it has spread.

Possible signs and symptoms

- A new cough that does not go away or gets worse
- Chest pain that is often worse when you breathe deeply, cough, or laugh
- A hoarse voice
- Unexplained weight loss and loss of appetite
- Coughing up blood or rust-colored sputum or phlegm
- Shortness of breath
- Infections such as bronchitis and pneumonia that do not go away or keep coming back
- Wheezing

Calculating pack-years*
(20 cigarettes = 1 pack)

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

*Your health care professional can help you determine the number of pack-years you have smoked.

What are the possible benefits and harms of lung cancer screening with LDCT?

BENEFIT: Greater chance of not dying from any cause (not just lung cancer)

- If 1,000 people are not screened with LDCT for lung cancer, 21 will die from lung cancer.
- If 1,000 people are screened with LDCT once a year for 3 years, 18 will die from lung cancer.
- This means that with LDCT screening, 3 fewer people will die from lung cancer.

BENEFIT: Greater chance of not dying from any cause (not just lung cancer)

- If 1,000 people are not screened with LDCT for lung cancer, 75 will die from any cause.
- If 1,000 people are screened with LDCT once a year for 3 years, 70 will die from any cause.
- This means that with LDCT screening, 5 fewer people will die from all causes.

HARM: False alarms and unnecessary additional testing

A false alarm happens when a person has a positive screening test but does not actually have lung cancer.

- If 1,000 people are screened every year for 3 years, about 356 will have a false alarm.
- Of these 356 people with a false alarm, 18 will have an invasive procedure such as a biopsy (a tiny piece of lung tissue is removed to test for cancer).
- Of these 18 people, less than 1 will have a major complication as a result of the procedure, such as bleeding in the lung, a collapsed lung, or an infection.

If you have a positive screening test, but your follow-up imaging tests and biopsy do not show cancer, you could still get lung cancer in the future. So it is important for you and your health care professional to discuss lung cancer screening every year.

What is lung cancer screening with LDCT?

During an LDCT scan, you lie on a table and (amount) of radiation to make detailed images takes a few minutes and is not painful.

HARM: Overdiagnosis

Lung cancer screening may find a lung cancer that would not harm or her lifetime if the cancer had not been found. This could lead to unnecessary treatment. At the time of diagnosis, there is no way for health care professionals to know how long a person will live. For this reason, almost all people who are treated for cancer that likely never would have harmed them.

HARM: Radiation exposure

Exposure to radiation increases a person's chance of developing cancer. If the screening test is positive, additional tests do not know how being exposed to radiation from LDCT scans affects people. The figure below shows the amount of radiation from one LDCT scan.

COMPARING SOURCES OF RADIATION

MILLIREMITS (mSv) RECEIVED

0.04 mSv	0.1 mSv	0.4 mSv
ONE TRAVEL ROUND NEW YORK	ONE CT SCAN	ONE YEAR OF NATURAL BACKGROUND RADIATION

mSv—millirem, a measure of the amount of radiation absorbed by the body.

Finding other things that are not lung cancer

Screening can find heart disease or thickened tissue in the lung, possible benefits or harms of finding other things about your body.

What is the difference between screening and diagnostic tests?

Screening is a medical term for testing to find a disease before symptoms are showing. Screening is done to find lung cancer before it has spread.

Diagnostic testing is not the same as screening. Diagnostic testing is used to find out if a person has lung cancer or when a screening test finds something that looks like lung cancer. Diagnostic testing is done to find out if a person has lung cancer, and additional testing is done because it can involve scans with higher amounts of radiation.

WHAT IS IMPORTANT TO YOU WHEN DECIDING ABOUT SCREENING FOR LUNG CANCER?

There are many things to think about when deciding whether lung cancer screening is right for you. Below is a list of questions that may help you decide.

How important is:	Favors Screening		Favors No Screening	
	Very Important	Not Important	Not Concerned	Very Concerned
How important is:				
Finding lung cancer early when it may be more easily treated?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
How concerned are you about:				
Having a false alarm?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Having other tests if you have a positive screening test?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Being exposed to radiation from lung cancer screening?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Being treated for lung cancer that never would have harmed you?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Being harmed by the treatments you receive for lung cancer?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

TALKING WITH YOUR HEALTH CARE PROFESSIONAL ABOUT LUNG CANCER SCREENING

Making the decision to be screened for lung cancer is a personal decision. You should talk with your health care professional and make the decision based on what is right for you.

Below are some questions to think about at your visit with your health care professional. Keep in mind the possible benefits and harms that are most important to you.

- Am I eligible for lung cancer screening?
- What happens if I decide not to be screened for lung cancer?
- Does my insurance cover lung cancer screening?
- Where should I go for lung cancer screening?
- Do I have to do anything to prepare for screening?
- How soon will I know the results of screening?
- What happens if the lung cancer screening shows something concerning?

WHAT ABOUT INSURANCE COVERAGE FOR LUNG CANCER SCREENING?

Private insurance plans cover lung cancer screening for people age 55 through 80, with no out-of-pocket costs.

Medicare pays for lung cancer screening with no out-of-pocket costs for people up to age 77 if you meet the following criteria:

- You must have a written order from your health care professional (your doctor, nurse practitioner, or physician assistant).
- You visit with your health care professional must be a "shared decision-making visit." In this visit your health care professional must use one or more decision aids and must discuss benefits and harms. Your health care professional must also talk about follow-up diagnostic testing, overdiagnosis, false alarms, and total radiation exposure from screening.
- You must go to a screening facility that participates in the lung cancer screening registry set up for Medicare patients.

Ask your health care professional about the criteria if you have Medicare coverage.

There may be additional costs for follow-up tests and/or treatments after the initial screening exam. Contact your insurance company to see if the procedures are covered and what the cost to you would be.

INFORMATION FOR CONSUMERS

- Understanding Lung Cancer
www.cancer.gov/types/lung
- Screening for Lung Cancer: Consumer Guide
www.uspreventiveservicestaskforce.org/Page/Document/UpdateSummaryFinalLung-Cancer-Screening
- Find an Approved Screening Facility
www.cms.gov/Medicare/Medicare-General-Information/MedicareApprovedFacilitiesLung-Cancer-Screening-Registry.html

WHAT IS YOUR DECISION ABOUT LUNG CANCER SCREENING?

- Screening is right for me.
- Screening is not right for me.
- I am unsure about screening.

AHRQ Publication No. 16-EHC007-12
March 2016

A decision aid for patients



Is Lung Cancer Screening Right for Me?

What are the facts about lung cancer?

- Lung cancer is the leading cause of cancer death in the United States. Each year, about 220,000 people are diagnosed with lung cancer and 150,000 people die from lung cancer.
- About half of the people diagnosed with lung cancer are 70 years of age or older. The typical age of death from lung cancer is 72 years.

Who should be screened for lung cancer?

The United States Preventive Services Task Force (USPSTF) is made up of experts in preventive medicine. Without pay, they review the current research to make recommendations about clinical preventive services such as screening, counseling, and preventive medications.

The USPSTF recommends lung cancer screening for individuals who:

- Are 55 to 80 years old
- Do not have any signs or symptoms of lung cancer (diagnostic testing may be recommended for people who do have signs or symptoms of lung cancer)
- Have not had lung cancer before
- Currently smoke or quit less than 15 years ago
- Are or were heavy smokers (30 pack-years history such as those who smoked 1 pack per day for 30 years or 2 packs per day for 15 years)

The USPSTF does not recommend lung cancer screening for individuals who:

- Have a condition that greatly limits how long they may live
- Are not willing to have surgery for lung cancer

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Agency for Healthcare Research and Quality
Improving Healthcare Through Evidence-Based Research

Possible signs of lung cancer

- » A new cough that gets worse
- » Chest pain that is worse when you breathe deeply, cough, or lie down
- » A hoarse voice
- » Unexplained weight loss
- » Coughing up blood or phlegm that is rusty or bloody
- » Shortness of breath
- » Infections such as pneumonia that do not go away
- » Wheezing

Remember, the best way to lower your chances of dying from lung cancer is to stop smoking.

More than 8 out of every 10 lung cancer cases in the United States are from smoking.

Lung cancer screening should not be done instead of quitting smoking. If you currently smoke, talk to your health care professional or call the nationwide quit line at

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

Why do not all lung cancer screening tests work the same? This is why.

For more information, visit www.cancer.gov/ipo/ipo-lung

IS LUNG CANCER SCREENING RIGHT FOR YOU?

Below is a decision aid to help you decide if lung cancer screening is right for you. Below is a decision aid to help you decide if lung cancer screening is right for you.

Favors No Screening		
	Not Important	Very Concerned
1. How important is it to you to know if you have lung cancer?	<input type="radio"/>	<input type="radio"/>
2. How important is it to you to know if you have lung cancer?	<input type="radio"/>	<input type="radio"/>
3. How important is it to you to know if you have lung cancer?	<input type="radio"/>	<input type="radio"/>
4. How important is it to you to know if you have lung cancer?	<input type="radio"/>	<input type="radio"/>
5. How important is it to you to know if you have lung cancer?	<input type="radio"/>	<input type="radio"/>
6. How important is it to you to know if you have lung cancer?	<input type="radio"/>	<input type="radio"/>
7. How important is it to you to know if you have lung cancer?	<input type="radio"/>	<input type="radio"/>
8. How important is it to you to know if you have lung cancer?	<input type="radio"/>	<input type="radio"/>
9. How important is it to you to know if you have lung cancer?	<input type="radio"/>	<input type="radio"/>
10. How important is it to you to know if you have lung cancer?	<input type="radio"/>	<input type="radio"/>

FINANCIAL COVERAGE FOR LUNG CANCER SCREENING?

Does your health insurance cover lung cancer screening for people age 55 to 80 years old with no out-of-pocket costs? If you meet the following criteria:

- You are a member of your health care professional's network, or physician assistant.
- Your health care professional must be a "shared" provider. In this visit your health care professional decision aids and must discuss benefits with you. Your health care professional must also talk about lung cancer screening, false alarms, and total costs of screening.
- Your health care professional must be at a screening facility that participates in the lung cancer screening program for Medicare patients.
- Your health care professional must discuss the criteria if you have Medicare.

What are the costs for follow-up tests and/or treatments if you have a positive result? Contact your insurance company to see what costs are covered and what the cost to you will be.

FOR CONSUMERS

- Understanding Lung Cancer: www.cancer.gov/ipo/ipo-lung
- Screening for Lung Cancer: Consumer Guide: www.uspreventiveservicestaskforce.org/Page/Document/UpdateSummaryFinalLungCancerScreening
- Find an Approved Screening Facility: www.cms.gov/Medicare/Medicare-General-Information/MedicareApprovedFacilitiesLungCancerScreening-Registers.html

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Improving Healthcare Through Evidence-Based Research

AHRQ Publication No. 14-EHC007-12
March 2014

Health care professionals to discuss lung cancer screening every year.

Screening because it can involve scans with higher amounts of samples of lung tissue.

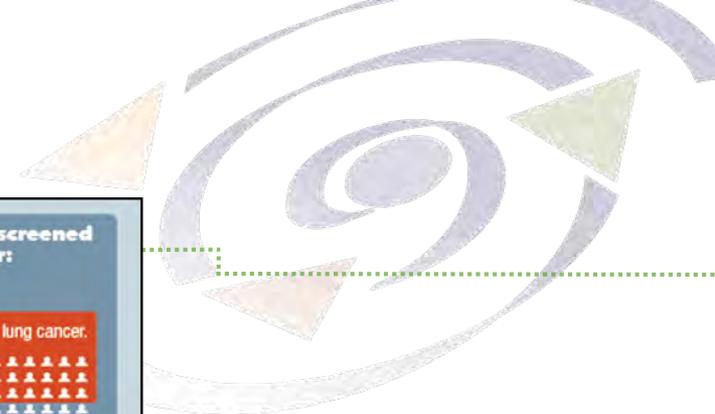
WHAT IS YOUR DECISION ABOUT LUNG CANCER SCREENING?

Screening is right for me.

Screening is not right for me.

I am unsure about screening.

A decision aid for patients



Is Lung Cancer Screening Right for You?

What are the facts about lung cancer?

- Lung cancer is the leading cause of cancer death in the United States. Each year, about 220,000 people are diagnosed with lung cancer and 150,000 people die from lung cancer.
- About half of the people diagnosed with lung cancer are 70 years of age or older. The typical age of death from lung cancer is 72 years.

Who should be screened for lung cancer?

The United States Preventive Services Task Force (USPSTF) is made up of experts in preventive medicine. Without pay, they review the current research to make recommendations about clinical preventive services such as screening, counseling, and preventive medications.

The USPSTF recommends lung cancer screening for individuals who:

- Are 55 to 80 years old
- Do not have any signs or symptoms of lung cancer (diagnostic testing may be recommended for people who do have signs or symptoms of lung cancer)
- Have not had lung cancer before
- Currently smoke or quit less than 15 years ago
- Are or were heavy smokers (20 pack-years history such as those who smoked 1 pack per day for 20 years or 2 packs per day for 15 years)

The USPSTF does not recommend lung cancer screening for individuals who:

- Have a condition that greatly limits how long they expect to live
- Are not willing to have surgery for lung cancer

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Agency for Healthcare Research and Quality
Improving Healthcare in the United States

- Possible**
- » A new cough that gets worse
 - » Chest pain that makes it hard to breathe deeply
 - » A hoarse voice
 - » Unexplained weight loss
 - » Coughing up blood or phlegm that is tinged with blood
 - » Shortness of breath
 - » Infections such as pneumonia that do not seem to go away
 - » Wheezing

Out of 1,000 people screened with LDCT for lung cancer:

3 lung cancer deaths will be prevented.

18 people will die of lung cancer.

356 people will get a "false alarm."

18 of the people who get a "false alarm" will have an invasive procedure like a biopsy.

Less than 1 of the 18 people who have an invasive procedure will have a major complication (e.g., infection, bleeding in lung, collapsed lung).

Out of 1,000 people not screened with LDCT for lung cancer:

21 people will die of lung cancer.

*For people screened once a year for 3 years and followed for an average of 6.5 years. This information applies to people who are at high risk of lung cancer because of their smoking history and age.

For people who do not get screened for lung cancer, the chance of dying from lung cancer is higher. This is why...

SCREENING FOR LUNG CANCER?
Screening is right for you. Below is a

Favors No Screening	
Not Important	<input type="radio"/>
Very Concerned	<input type="radio"/>

INSURANCE COVERAGE FOR LUNG CANCER?

Does your lung cancer screening for people age 55 to 80 years have no out-of-pocket costs?

Screening screening with no out-of-pocket costs if you meet the following criteria:

- In order from your health care professional (doctor, or physician assistant).
- Your health care professional must be a "shared decision maker" and must discuss benefits and risks with you. Your health care professional must also talk about screening, overdiagnosis, false alarms, and total costs.
- The facility that participates in the lung cancer screening must be a Medicare-approved facility for Medicare patients.
- The facility must meet the criteria if you have Medicare.

What are the costs for follow-up tests and/or treatments? Contact your insurance company to see if the costs are covered and what the cost to you is.

RESOURCES FOR CONSUMERS

- Understanding Lung Cancer: www.cancer.gov/types/lung
- Screening for Lung Cancer: Consumer Guide: www.uspreventiveservicestaskforce.org/DocumentUpdateSummary/instant-lung-cancer-screening
- Find an Approved Screening Facility: www.cms.gov/Medicare/Medicare-General-Information/MedicareApprovedFacilities/Lung-Cancer-Screening-Registers.html

AHRQ
AHRQ Publication No. 16-EHC007-12
March 2016

A decision aid for patients

Out of 1,000 people screened with LDCT for lung cancer:

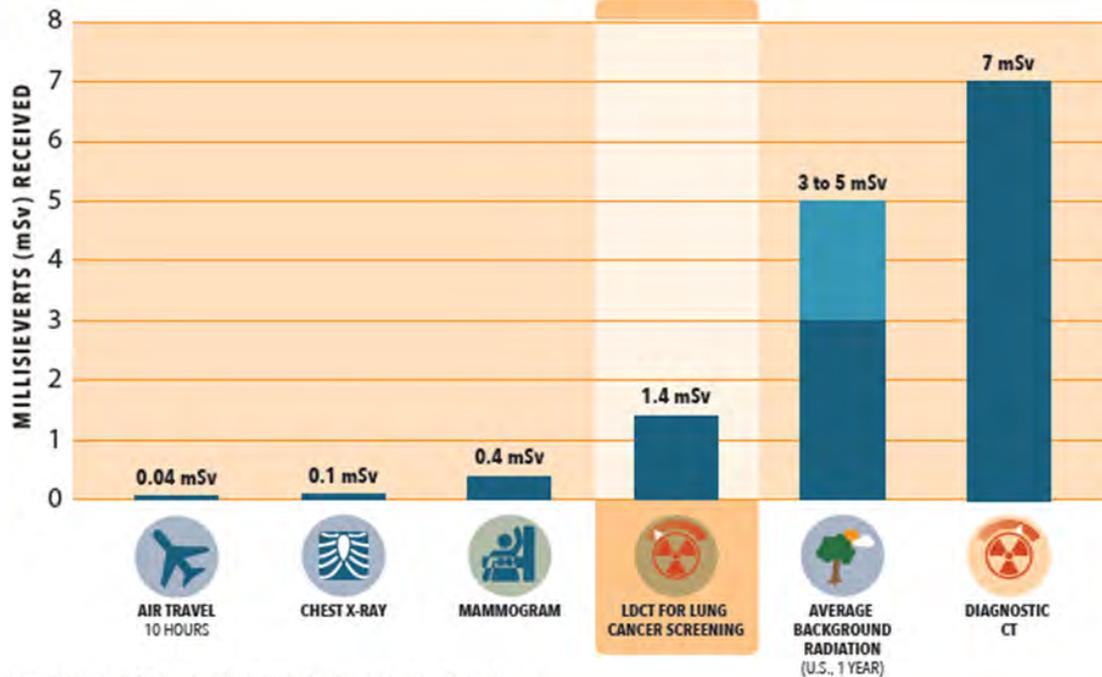
3 lung cancer deaths will be prevented.

18 people will die of lung cancer.

Out of 1,000 people not screened with LDCT for lung cancer:

21 people will die of lung cancer.

COMPARING SOURCES OF RADIATION



mSv=millisievert, a measure of the amount of radiation absorbed by the body.

18 of the people who get a "false alarm" will have an invasive procedure like a biopsy.

Less than 1 of the 18 people who have an invasive procedure will have a major complication (e.g., infection, bleeding in lung, collapsed lung).

*For people screened once a year for 3 years and followed for an average of 6.5 years. This information applies to people who are at high risk of lung cancer because of their smoking history and age.



What are the facts about lung cancer?

Lung cancer is the leading cancer death in the United States. In 2014, about 220,000 people with lung cancer and 150,000 died from lung cancer. About half of the people die with lung cancer are 70 years or older. The typical age of diagnosis is 72 years.

Who should be screened for lung cancer?

The United States Preventive Services Task Force (USPSTF) is made up of preventive medicine. Without a review of the current research to recommendations about clinical services such as screening, or preventive medications.

The USPSTF recommends lung screening for individuals who:

- Are 55 to 80 years old
- Do not have any signs or symptoms of lung cancer
- Have not had lung cancer before
- Currently smoke or quit less than 15 years ago
- Are or were heavy smokers (5 years history such as 1 pack per day for 30 years or 1 pack per day for 15 years)

The USPSTF does not recommend cancer screening for individuals who:

- Have a condition that greatly limits their life expectancy
- Are not willing to have a lung cancer screening



IS LUNG CANCER?

Below is a

FAVORS NO SCREENING

Not Important

Very Concerned

www.aahrq.gov/medicare/medicare-coverage-database/medicare-approved-for-lung-cancer-screening-eligibility.html



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March 2016

A decision aid for patients

Out of 1,000 people screened with LDCT for lung cancer:

3 lung cancer deaths will be prevented.

Out of 1,000 people not screened with LDCT for lung cancer:

WHAT IS IMPORTANT TO YOU WHEN DECIDING ABOUT SCREENING FOR LUNG CANCER?

There are many things to think about when deciding whether lung cancer screening is right for you. Below is a list of questions that may help you decide.

	Favors Screening			Favors No Screening		
	Very Important	Important	Not Important	Very Concerned	Concerned	Not Concerned
How important is:						
Finding lung cancer early when it may be more easily treated?	<input type="radio"/>					
How concerned are you about:						
Having a false alarm?	<input type="radio"/>					
Having other tests if you have a positive screening test?	<input type="radio"/>					
Being exposed to radiation from lung cancer screening?	<input type="radio"/>					
Being treated for lung cancer that never would have harmed you?	<input type="radio"/>					
Being harmed by the treatments you receive for lung cancer?	<input type="radio"/>					



What are the risks of lung cancer?

Lung cancer is the leading cause of cancer death in the United States. In 2014, about 220,000 people died from lung cancer. About half of the people with lung cancer are older. The typical age at diagnosis is 72 years.

Who should be screened for lung cancer?

The United States Preventive Services Task Force (USPSTF) is a group of experts who review the current best evidence about preventive services such as screening for lung cancer.

The USPSTF recommends screening for individuals who:

- Are 55 to 80 years old
- Do not have any signs or symptoms of lung cancer (diagnosed by a doctor)
- Have not had lung cancer
- Currently smoke or quit within the last 15 years
- Are or were heavy smokers (at least 1 pack per day for 20 years)

The USPSTF does not recommend screening for individuals who:

- Have a condition that greatly limits their life expectancy
- Are not willing to have surgery for lung cancer



AIR TRAVEL
10 HOURS



CHEST X-RAY



MAMMOGRAM



LDCT FOR LUNG
CANCER SCREENING



AVERAGE
BACKGROUND
RADIATION
(U.S., 1 YEAR)



DIAGNOSTIC
CT

mSV=millisievert, a measure of the amount of radiation absorbed by the body.

18 of the people who get a "false alarm" will have an invasive procedure like a biopsy.

Less than 1 of the 18 people who have an invasive procedure will have a major complication (e.g., infection, bleeding in lung, collapsed lung).

*For people screened once a year for 3 years and followed for an average of 6.5 years. This information applies to people who are at high risk of lung cancer because of their smoking history and age.

www.aahrq.gov/medlineplus/medlineplus/article.jsp?id=i66007
MedicareApprovedFacility Lung Cancer Screening Page 12 of 12

AHRQ Publication No. 16-0007-12
March 2016

A decision aid for patients

Out of 1,000 people screened with LDCT for lung cancer:

3 lung cancer deaths will be prevented.

Out of 1,000 people not screened with LDCT for lung cancer:

WHAT IS IMPORTANT TO YOU WHEN DECIDING ABOUT SCREENING FOR LUNG CANCER?

There are many things to think about when deciding whether lung cancer screening is right for you. Below is a list of questions that may help you decide.

How important is:

Finding lung cancer early when it may be more

How concerned are you about:

Having a false alarm?

Having other tests if you have a positive screening

Being exposed to radiation from lung cancer screening

Being treated for lung cancer that never would have

Being harmed by the treatments you receive for

TALKING WITH YOUR HEALTH CARE PROFESSIONAL ABOUT LUNG CANCER SCREENING

Making the decision to be screened for lung cancer is a personal decision. You should talk with your health care professional and make the decision based on what is right for you.

Below are some questions to think about at your visit with your health care professional. Keep in mind the possible benefits and harms that are most important to you.

- Am I eligible for lung cancer screening?
- What happens if I decide not to be screened for lung cancer?
- Does my insurance cover lung cancer screening?
- Where should I go for lung cancer screening?
- Do I have to do anything to prepare for screening?
- How soon will I know the results of screening?
- What happens if the lung cancer screening shows something of concern?

Screening

Not important

Very concerned

LUNG CANCER?

Below is a

favor or screening

Not important

Very concerned



What are the risks of lung cancer?

Lung cancer is the leading cause of cancer death in the United States. About 220,000 people die from lung cancer each year. About half of the people with lung cancer are older. The typical age at diagnosis is 72 years.

Who should be screened for lung cancer?

The United States Preventive Services Task Force (USPSTF) recommends that people aged 55 to 80 years old who have a history of smoking should be screened for lung cancer.

The USPSTF does not recommend screening for lung cancer for people who:

- Do not have any signs or symptoms of lung cancer (diagnosed by a health care professional)
- Have not had lung cancer
- Currently smoke or quit smoking less than 15 years ago
- Are or were heavy smokers (at least 1 pack per day for 20 years)

The USPSTF does not recommend screening for lung cancer for people who:

- Have a condition that makes it difficult to breathe
- Are not willing to have surgery or other treatments for lung cancer



AIR TRAVEL
10 HOURS

mSv=millisievert, a measure of the amount of radiation

18 of the people have an invasive

Less than 1 of the people have a complication (e.g. collapsed lung).

because of their smoking history and age.

A decision making tool for the clinical encounter



Is lung cancer screening right for me?

A Decisionmaking Tool for You and Your Health Care Professional

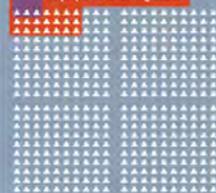
If you have smoked for many years, you may want to think about lung cancer screening (testing) with low-dose computed tomography (LDCT). Before making a decision, you should think about the possible benefits and harms of lung cancer screening.

What are the possible benefits and harms of lung cancer screening?

Out of 1,000 people screened with LDCT for lung cancer:

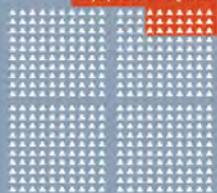
3 lung cancer deaths will be prevented.

18 people will die of lung cancer.



Out of 1,000 people not screened with LDCT for lung cancer:

21 people will die of lung cancer.



What are the possible benefits and harms of lung cancer screening with LDCT?

BENEFIT: Greater chance of not dying from lung cancer

- » If 1,000 people are not screened for lung cancer with LDCT, 21 will die from lung cancer.
- » If 1,000 people are screened once a year with LDCT for 3 years, 18 will die from lung cancer.
- » This means that with LDCT screening, 3 fewer people will die from lung cancer.

BENEFIT: Greater chance of not dying from any cause (not just lung cancer)

- » If 1,000 people are not screened for lung cancer with LDCT, 75 will die from any cause.
- » If 1,000 people are screened once a year with LDCT for 3 years, 70 will die from any cause.
- » This means that with LDCT screening, 5 fewer people will die from any cause.

HARM: False alarms and unneeded additional testing

A false alarm happens when a person has a positive screening test but does not actually have lung cancer.

- » If 1,000 people are screened every year for 3 years, about 356 will have a false alarm.
- » Of these 356 people with a false alarm, 18 will have an invasive procedure such as a biopsy (a tiny piece of lung tissue is removed to test for cancer).
- » Of these 18 people, less than 1 will have a major complication as a result of the procedure, such as bleeding in the lung, a collapsed lung, or an infection.

If you have a positive screening test, but your followup imaging tests and biopsy do not show cancer, you could still get lung cancer in the future. So it is important for you and your health care professional to discuss lung cancer screening every year.

HARM: Radiation Exposure

This includes radiation from screening plus radiation from additional testing. High doses (amounts) of radiation increase a person's chance of developing cancer.

HARM: Overdiagnosis

Screening may find lung cancer that would not have harmed the person in his or her lifetime.

*For people screened once a year for 3 years and followed for an average of 6.5 years. This information applies to people who are at high risk of lung cancer because of their smoking history and age. The possible benefits and harms from lung cancer screening represent the "average" effect and may not apply to all healthy cancer and former heavy smokers.

Finding other things that are not lung cancer:

For example, screening can find heart disease or thickened tissue in the lungs from scarring. Researchers do not know the possible benefits or harms of finding other things about your health through lung cancer screening.

WHAT ELSE SHOULD YOU THINK ABOUT WHEN DECIDING ABOUT LUNG CANCER SCREENING?

- » Lung cancer screening should be done every year until you no longer need to be screened.
- » Lung cancer screening may not be right for you if you develop other major health problems.
- » If you are not willing to have lung surgery, lung cancer screening may not be right for you.
- » Lung cancer screening is not a substitute for quitting smoking.

INSURANCE COVERAGE

- » Private insurance plans cover lung cancer screening for people age 55 through 80 with no out-of-pocket costs.
- » Medicare covers lung cancer screening with no out-of-pocket costs for people up to age 77 years who meet other criteria.
- » You and your insurance company will be responsible for the costs of additional tests and treatment after the initial screening test.

What is important to you when deciding?	Favors Screening		Favors No Screening	
How important is:	Very Important	Important	Not Important	Very Not Important
Finding lung cancer early when it may be more easily treated?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
How concerned are you about:	Not Concerned	Concerned	Very Concerned	Extremely Concerned
Having a false alarm?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Having other tests if you have a positive screening test?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Being exposed to radiation from lung cancer screening?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Being treated for lung cancer that never would have harmed you?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Being harmed by the treatments you receive for lung cancer?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

WHAT OTHER QUESTIONS DO YOU HAVE?

BENEFITS OF QUITTING SMOKING

- » Lower risk for other types of cancer.
- » Lower risk for heart disease, stroke, and narrowing of the blood vessels outside your heart.
- » Fewer problems with breathing, such as coughing, wheezing, or shortness of breath.
- » Lower risk for other lung disease (such as chronic obstructive pulmonary disease or COPD).

WHAT IS YOUR DECISION ABOUT LUNG CANCER SCREENING?

- Screening is right for me. (Ask your health care professional for the screening center information.)
- Screening is not right for me.
- I am unsure about screening.

Remember, the best way to prevent lung cancer is to **STOP SMOKING.**
If you currently smoke, talk to your health care professional or call the nationwide quit line at 1-800-QUIT-NOW (1-800-784-8669).

NEXT STEPS IF SCREENING IS RIGHT FOR YOU

Get a written order from your health care professional and go to the imaging facility listed below.

Name: _____

Address: _____

Phone: _____

Email or Web site: _____

Date of screening visit: _____



Communication strategies with patients



1. Provide clear information

- Risks and benefits of lung cancer screening (see Checklist Talking Points)
- Use everyday language, pictures, graphs, example, analogies, stories (communicating 'gist')
- How do you know your message is clear? *Check for patient understanding.*
- Examples:
 - “I know you’ve gotten a lot of information. What stands out as particularly important to you?”
 - “So we’ve talked about possible harms of LCS. What do you think about those risks?”

Communication strategies with patients



■ Remember:

- Information has no meaning until someone tries to make sense of it.
- There is no one way to provide clear information; the key is to provide information in a way the patient can understand it.
- It is important to check for patient understanding.

Communication strategies with patients



2. Elicit/validate a patient's beliefs, concerns, and preferences (or values)
 - Ask what a patient thinks about lung cancer screening by exploring beliefs, concerns, and preferences (or values).
 - But remember:
 - Concerns and preferences are not misinformed; they are grounded in a reality that is coherent, rational, and meaningful to the patient.
 - Try to connect clinical evidence to a patient's values, preferences, and emotions.

Communication strategies with patients



▶ Example

- **Pt:** “Well if lung cancer screening can save my life, then that sounds good.”
- **Dr:** “That’s right, it could save your life. But remember, the research indicates that out of 1,000 people screened, 3 lives will be saved but 18 still died. And about 350 will have a false alarm, and some of these patients will have additional tests that can lead to complications.”

“So what do you think when you compare the numbers of lives saved with false alarms?”

Communication strategies with patients



3. Try to reach mutual understanding and agreement

- Check your understanding of the patient's perspective.
 - “So what you're saying is if there is at least some chance to save your life, you want to do it even if the odds of a false alarm are much greater?”
 - “Let me see if I got this right. You think the likelihood this could save your life is quite small, and you really worried about what would happen with a false positive?”

- Check the patient's understanding of what you have shared with the patient, including any concerns you have.
 - “So you know what I'm concerned about?”

Communication strategies with patients



- Strive for common ground on best course of action.
- Mutually acknowledge the action to be taken.
 - “Ok, we will schedule the screening sometime next week. So take this to the desk and they will set you up for the appointment.”
 - “So right now we are just going to wait. And we can revisit the possibility of lung cancer screening at your next appointment. Are we on the same page with that?”

Additional considerations for lung cancer screening conversations



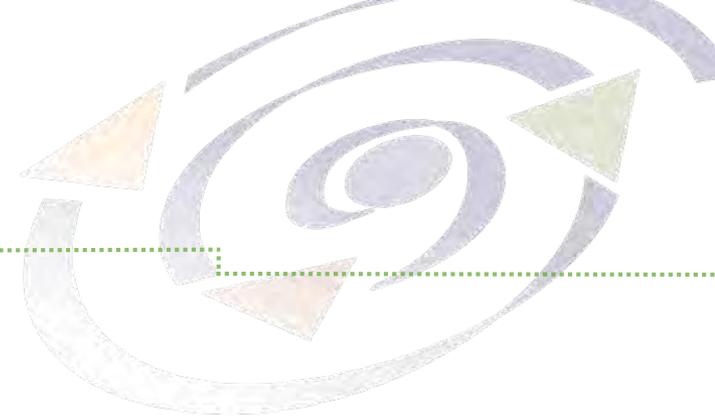
- ▶ The patient has a knowledge about LCS or has received the decision aid before the consultation
 - First, ask patient about his or her thoughts about LCS.
 - This lets the clinician know what the patient understands and what their initial preferences are and why.
 - If a patient has used the aid, but say he/she is not sure what to think about it, then follow with a probe (“Well just tell me some of your thoughts about it.”)
 - Fill in knowledge gaps and explore preferences/concerns.
- ▶ The patient has no or very limited knowledge of LCS
 - Use the decision-making tool in the encounter to educate, identify concerns, and discuss preferences.

In conclusion: How might the lung cancer screening tools be used?



- ▶ Adapt the tools for a variety of primary care settings.
- ▶ Integrate the tools with electronic health records (Clinician's Checklist).
- ▶ Adapt the tools for different patient populations.
- ▶ Couple the tools with clinician training in shared decision making.

Contact information



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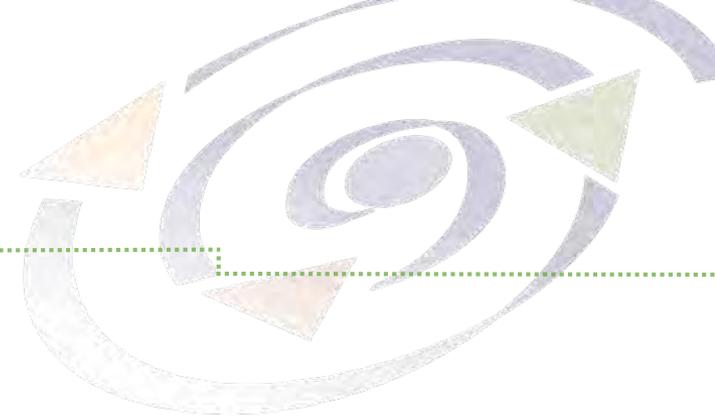
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Obtaining CME/CE credits

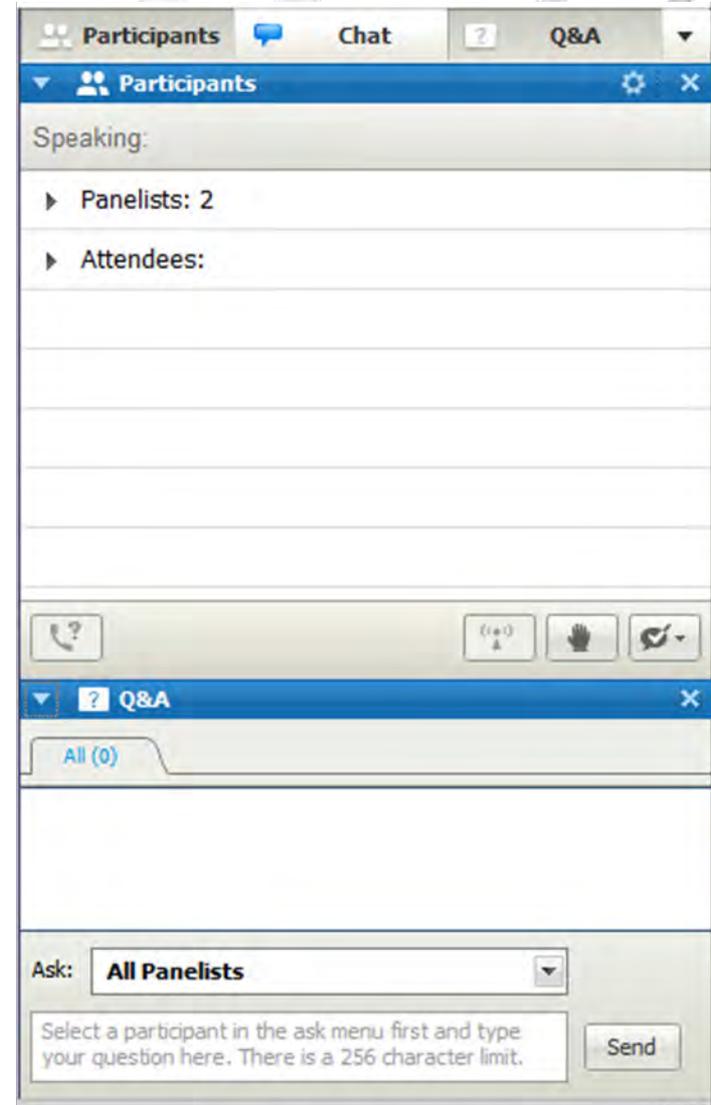


- ▶ If you would like to receive continuing education credit for this activity, please visit:

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- ▶ At any time during the presentation, type your question into the “Q&A” section of your WebEx Q&A panel.
- ▶ Please address your questions to “All Panelists” in the dropdown menu.
- ▶ Select “Send” to submit your question to the moderator.
- ▶ Questions will be read aloud by the moderator.
- ▶ SHARE@ahrq.hhs.gov



The screenshot displays the WebEx interface with the 'Q&A' tab selected. The 'Participants' panel is visible, showing 'Speaking:' with 'Panelists: 2' and 'Attendees:'. Below this, the 'Q&A' panel is open, showing 'All (0)' questions. At the bottom, the 'Ask:' dropdown menu is set to 'All Panelists'. A red arrow points to the 'Send' button. The text below the dropdown menu reads: 'Select a participant in the ask menu first and type your question here. There is a 256 character limit.'

Questions about AHRQ's:

SHARE Approach Program

Contact:

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SHARE@ahrq.hhs.gov

Effective Health Care Program / Lung Cancer Screening Tools

Contact:

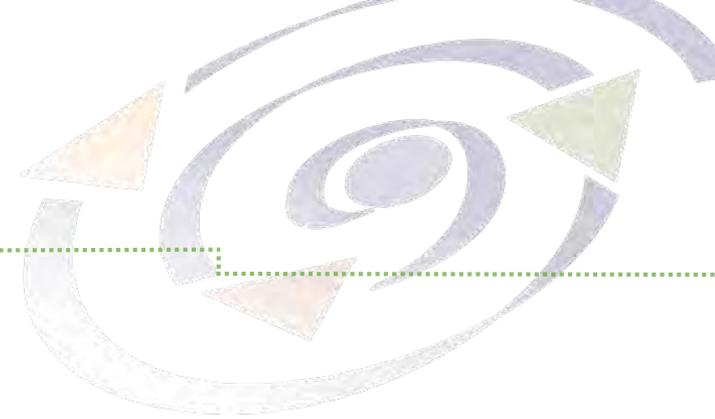
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