

# RFA Concept

Smoking Cessation within  
the Context of Lung  
Cancer Screening with  
Low Radiation Dose  
Computed Tomography

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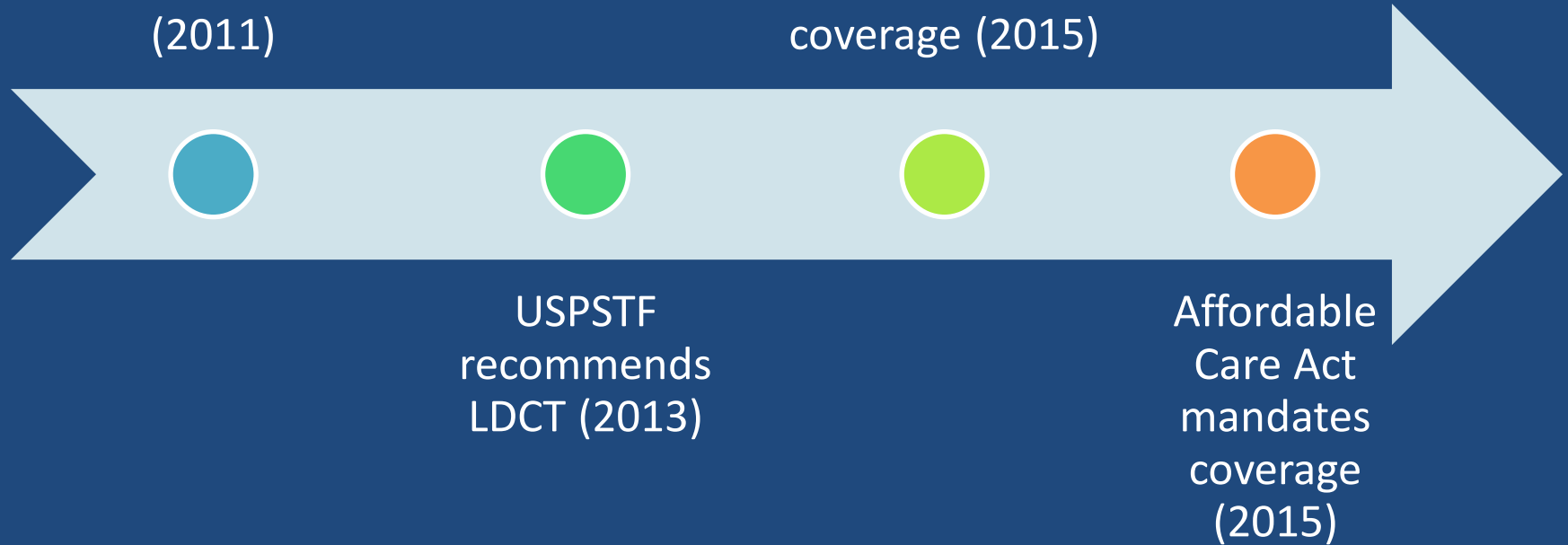
# RFA Concept

- Lung cancer screening is rapidly expanding.
- Smoking cessation service should be incorporated into screening.
- Research is needed to provide models of smoking cessation services for this setting.

# Low-dose computed tomography (LDCT) lung cancer screening

NLST reports  
benefit for high  
risk individuals\*  
(2011)

CMS announces  
Medicare  
coverage (2015)



\*High risk: age 55-74, 30 pack-year history,  
quit within 15 years or current smoker

# Cessation at lung cancer screening: Rationale

- 8.6 million Americans were LDCT-eligible (2010).
- Trials indicate 50% of those screened are smokers.
- Rates of continued smoking are high even in screening trials (up to 90%).
- There is concern that screening could discourage cessation for some patients.
- If cessation is not addressed, may send a message that it is not important.

# Cessation at lung cancer screening

- USPSTF encourages incorporating cessation.
- CMS will require
  - pre-screening cessation counseling & referral
  - cessation intervention available at imaging facility
- American College of Radiology Lung Cancer Screening Center designation requires attestation that cessation is addressed.

The question is not *whether*. The question is *how* to provide cessation service in this setting.

Effective cessation interventions exist for general population:

Behavioral counseling + pharmacotherapy

→ 33% long-term abstinence\*

versus 11% without assistance

\* (meta-analysis of clinical trials, in Treating Tobacco Use and Dependence, Public Health Service, 2008)

# Multiple pathways for LDCT screening

## REFERRAL

Clinician-referred,  
Medicare

Clinician-referred, non-Medicare

Self-referred

LDCT  
Screening  
Exam

## FOLLOW-UP

Patient's  
referring clinic

Note to patient  
(if  
unremarkable)

Screening  
facility

Facilities range from small clinics to large hospitals.

# Overarching research question

What are the key **components and characteristics** of a successful cessation program at low-dose CT lung cancer screening?

Outcome: long-term cigarette smoking abstinence



# Examples of research questions

- Does the success of specific cessation methods differ by:
  - individual characteristics?
  - exam results? *If scan is unremarkable, is patient less likely to quit smoking?*
- How do approaches compare with respect to intervention fidelity, provider reach, cost, cost-effectiveness, ease of delivery?

# RFA Recommendation

6 R01 awards

Proposed budget: \$4.5 million total costs per year

Research design

- Innovative intervention or implementation focus
- Developing/testing delivery models
- Comparative design

Common measures

Dissemination



Extra slides

# Justification for RFA

Portfolio: No funded studies regarding smoking cessation in the setting of lung cancer screening in FY2014 or FY2015, NCI or other NIH Institutes and Centers.

Few researchers working in this area.

RFA can stimulate research to coincide with LDCT rapid expansion.

# Evaluation of the RFA

- Have we identified key characteristics of successful cessation programs in variety of LDCT screening settings?
- Have we developed cessation approaches with good intervention fidelity and ease of delivery?

# Cost-effectiveness

Villanti *et al.* A cost-utility analysis of lung cancer screening and the additional benefits of incorporating smoking cessation interventions. *PLoS One*. 2013;8(8):e71379.

Evans *et al.* Computed tomography screening for lung cancer without a smoking cessation program--not a cost-effective idea.

*J Thorac Oncol*. Nov 2011;6(11):1781-1783

# Medicare coverage

Ages 55-77

> 30 pack-years smoking history

Current smoker or quit within 15 years

Requires written order after a counseling and shared decision-making visit

Counseling includes discussion of smoking and referral to cessation services.



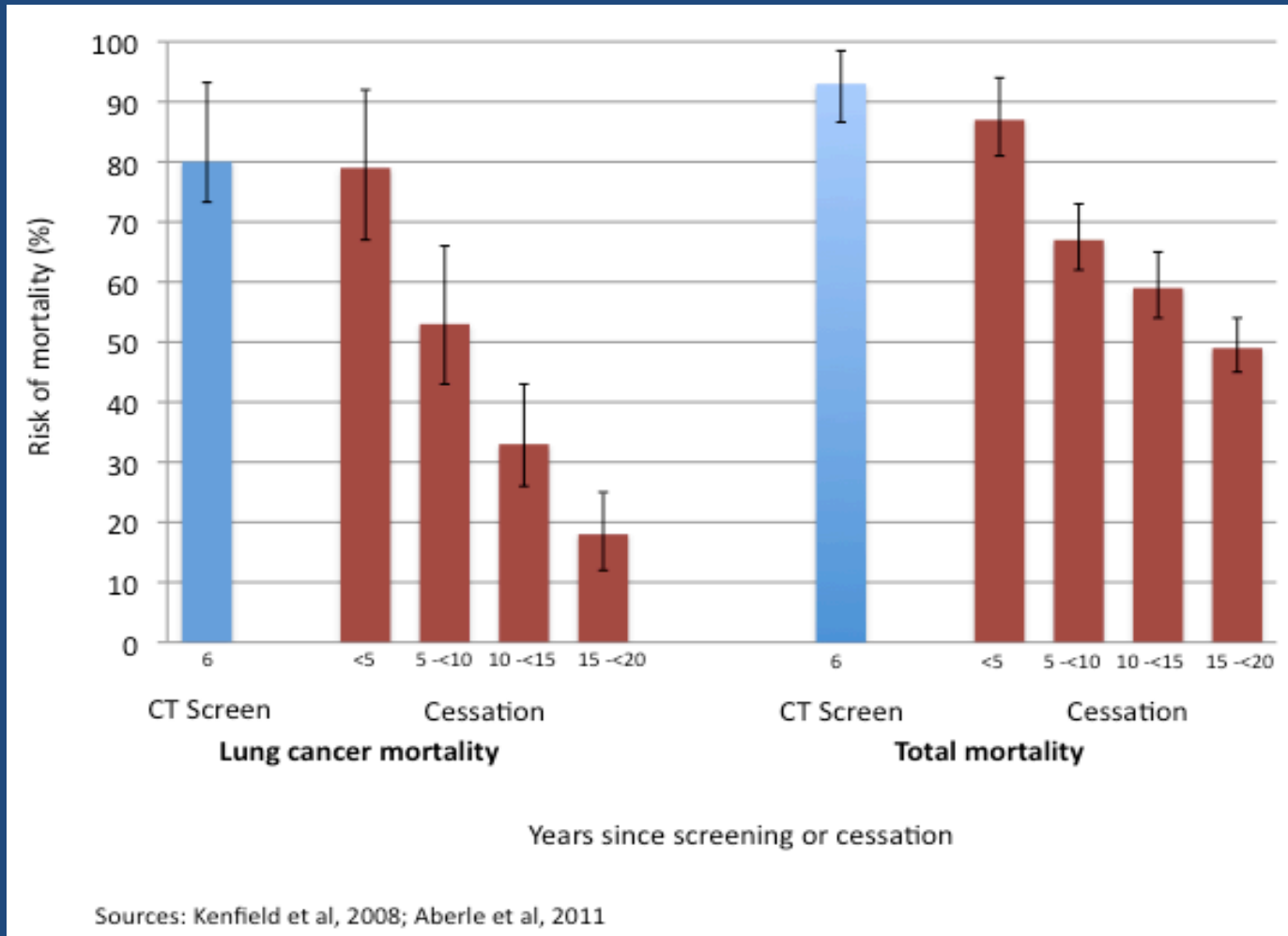
# CMS Proposed Decision Memo

- “Persons who are referred to LC screening through primary care should receive [smoking cessation] interventions before referral.”
- “Because many may enter screening through pathways besides referral from primary care, **USPSTF encourages incorporating such interventions into the screening program.**”

“The cost-effectiveness of CT screening will likely be **strongly linked to achievable smoking cessation rates**. Trials and further modeling should explore the consequences of relationships between smoking behaviors and screening participation.”

- McMahon *et al.*, 2011

# Time course: lung & total mortality



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# LDCT Screening Setting

- LDCT is being provided in small clinics and large hospitals.
- Radiology clinics don't typically provide cessation interventions.
- Cessation approaches used in other settings do not readily apply.



# Research questions

- (b) Will patients who receive good news believe they may continue smoking? Will patients who receive bad news believe it is too late to quit smoking?
- (c) How do smoker characteristics (e.g. vulnerable populations) affect how an intervention should be provided? What are the characteristics of screening participants?

# Research questions

- (d) How do approaches compare with respect to intervention fidelity, provider reach, cost, cost-effectiveness, ease of delivery?
- (e) How should screening results be incorporated into cessation messages?
- (f) Who should be involved in delivering the cessation intervention (clinic staff, community physician, outside resources such as quitline)?