



# Lung cancer screening & cessation motivation among current smokers: Snapshot of Screening in VA

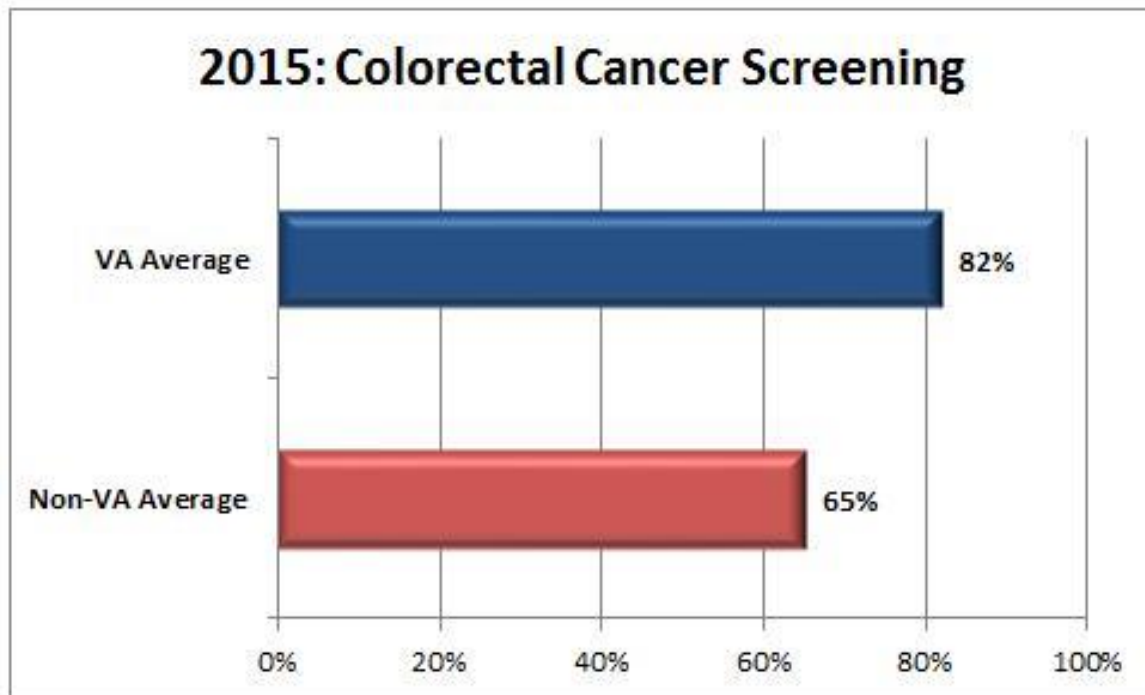
Steven B. Zeliadt, PhD MPH

# Background

- Largest integrated health care provider in U.S.
  - 155 Medical Centers; >1,000 outpatient clinics
- 9 million enrolled patients/6.5 million annual users
  - ~21 million Veterans in U.S.
  - Aging population/predominately Vietnam-era Veterans
  - 90% of VA users are men
- Veterans more likely to have a history of smoking, be a current smoker, and have been a heavier smoker than general population
- **900,000 VA-users estimated to be eligible for lung cancer screening – substantial portion of all eligible in U.S.**

# Preventive Care is Priority

- Outperforms community in delivery of preventive services



# Demonstration Project – Cessation

- How to integrate smoking cessation emerged as a challenge
- “We have smart people in the field – they will figure it out”
- Many, many cessation resources
  - National
    - VA Quitline (1-855-QUIT-VET)
    - National formulary guidelines
  - Local (variation)
    - Medical Center cessation leads
    - Behavioral counselors
    - Group/individual support groups

# What really happens?

- Feasibility study of proactive telephone/quitline counseling

	Control (N=56)	Intervention (N=27)	Relative Risk (95% Confidence Interval)
Participated in any behavioral support program since being offered screening (Quitline, group or individual counseling)	11%	44%	4.1 (1.7 – 9.9)
7-day abstinence cigarettes	7%	19%	2.6 (0.8 – 8.9)
Tried to reduce how much you smoke since offered screening	66%	81%	1.2 (1.0 – 1.6)
Used VA Quitline	5%	15%	2.8 (0.7 – 11.5)
Confident you can quit smoking	64%	89%	1.4 (1.1 – 1.8)
Contemplation Ladder			
8-10 (High motivation)	34%	59%	1.7 (1.1 – 2.8)
0-7 (Low motivation)	66%	41%	

# What is the Patient Experience?

- Telephone interviews with current smokers offered screening
  - Pre & post results
- Purposes
  - Assess what was happening in the field from patient view
  - Insights into how to improve cessation support, if necessary

Research

Original Investigation

## Attitudes and Perceptions About Smoking Cessation in the Context of Lung Cancer Screening

Steven B. Zeliadt, PhD, MPH; Jaimee L. Heffner, PhD; George Sayre, PsyD; Deborah E. Klein, MD; Carol Simons, BA; Jennifer Williams, BA; Lynn F. Reinke, PhD, APRN; David H. Au, MD, MS

**IMPORTANCE** Broad adoption of lung cancer screening may inadvertently lead to negative population health outcomes if it is perceived as a substitute for smoking cessation.

**OBJECTIVE** To understand views on smoking cessation from current smokers in the context of being offered lung cancer screening as a routine service in primary care

 Invited Commentary



PERSONAL HEALTH

### Lung Screening May Not Push Smokers to Quit

By JANE L. BRODY SEPTEMBER 7, 2015 9:45 AM 43



Paul Rogers

 Email

 Share

 Tweet

 Save

 More

The results of an admittedly small but telling new study suggest that Medicare and other insurers could be spending billions of dollars on screening smokers for lung cancer that would be better spent on helping them quit and keeping others from starting.

Although screening is considered "a teachable moment" that could be used to foster smoking cessation, the new study indicated that it more often bolstered smokers' beliefs that they had dodged a bullet and could safely continue to smoke. Even when nodules were found that suggested cancer-in-the-making, most participants remained

# Qualitative Approaches

- Deductive

Theory/Hypothesis → Observation → Confirmation

- Confirm if patients were left with perception of screening as substitute for cessation (David Eddy)

- Inductive

Observation → Confirmation → Theory/Hypothesis

- Very exploratory, what are patient perceptions when offered screening with demonstrated mortality reduction?

# Net Population Outcomes

## DIAGNOSIS AND TREATMENT

### Screening for Lung Cancer

David M. Eddy, MD, PhD

Lung cancer is the commonest cause of death from both men and women, with approximately 152,000 cases and 139,000 deaths in 1988. The incidence rates are increasing rapidly in women. Two main

The main harms are the possibility of a false-positive result and consequent work-up (in the range of 0% to 10% per examination for the chest roentgenogram and 0% to 1% for the sputum cytology examination), the small possibility of an incorrect diagnosis of lung cancer, a false sense of security, and a decreased motivation to stop smoking. The main costs are those of the examinations and the work-ups for false-positive test results. The main benefit is whatever psychological comfort the patient and physician derive from doing the examinations; there is no evidence the patient's chance of dying from lung cancer will be decreased by early detection.

# Evidence of Health Certificate Bias

“Because it came back negative it is a positive part of your body that 45-50 years of this hasn’t contaminated it.

“People have been smoking for centuries and a lot of people over a hundred have been smoking for over 50 years and they haven’t had any problems... Maybe I am saying that for myself... Being able to go through this thing and finding out no huge abnormalities or problems going on with my x-ray [sic]. It’s a huge relief.”

# Nuances – Inductive Approaches

- Emotional reflection induced by screening is opportunity
- Expecting to find something -> relieved/thrilled? with nodule
- “External” agent more powerful/easier than quitting
- Exaggerated beliefs about screening (everyone benefits?)
- Patients will likely interpret findings through lens of cognitive dissonance
  - Focus on emotional over technical (e.g. nodule size 6mm)
- Clarifying risks is challenging
  - LCS perceived as tool to assess how much damage smoking has caused
  - Nuances to “teachable moment”

# Example of cognitive dissonance

- Smokers know they should quit, but...
- Many smokers expected something to be found
- Finding nodules = saving lives
- Detection of a small nodule, that can be followed and not treated, was often perceived very favorably

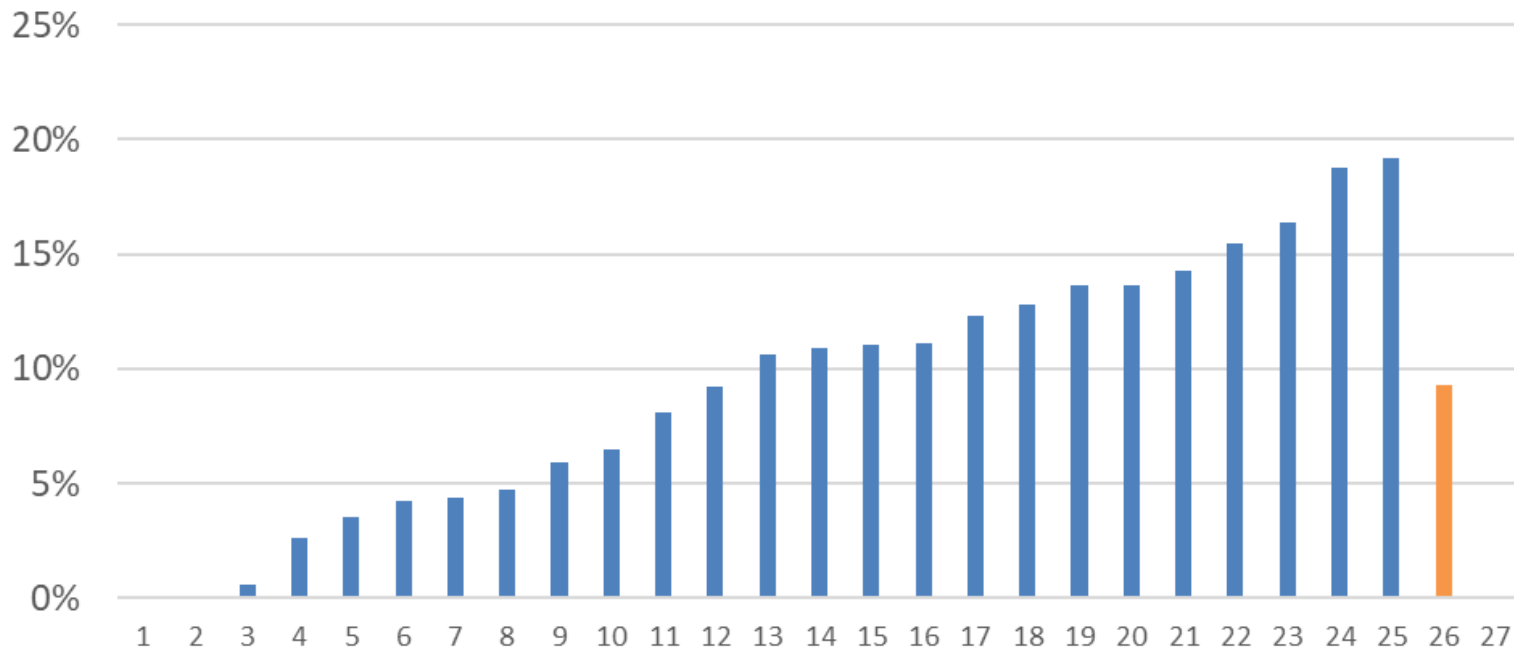
“Two nodules on lungs and I am to go back to be checked again in 3 months... Thought a lot about it after the test. It [quitting] must be done – time to do it...

[Probed about next steps]: **I’m happy the nodules were small**, if they are large in 3 months, I will have to act.”

# Path Forward

- Provider/facility variation in EHR measures of cessation
  - 17,982 patients; 9,342 (52%) current smokers baseline
  - 871 (9.3%) changed status in EHR within 12 months

% Quit at 12 months



# Sources of Variation

- Range with EHR data across 25 sites: <1% to 19%
- Due to provider variation (ICC) = 0.18 (.03-.24)
- Due to facility variation (ICC) = 0.24 (.13-.38)
- Let's find mechanisms can we use to reduce variation

# Communication of results may be critical

Results letter language can lead to misperceptions:

~~"There were NO abnormal findings concerning for lung cancer. While this is very good news and reassuring, it is recommended that as long as you meet the criteria that you consider having an annual screening low-dose CT scan."~~

# Messaging is critical

## Saved by the Screen campaign

“Quitting smoking at any time benefits your overall health *and* lowers your chances of developing lung cancer.

## Annual low-dose CT scans could save you from lung cancer

Laura Barcella, for American Lung Association's LUNG FORCE Initiative Published 9:19 a.m. ET Nov. 2, 2017

*Are you at high risk for lung cancer? Take the quiz today.*



*(Photo: American Lung Association's LUNG FORCE Initiative)*

Lung cancer is the number one cancer killer among women and men in the United States, killing 426 people every day. Though the five-year survival rate for lung cancer is 17.7 percent, among the lowest for all types of cancers, science is making promising progress when it comes to screening and early detection.

If you're a former smoker who has quit, you're making strides toward improving your health, but it is important to remember that many ex-smokers are still at high risk for lung cancer. While smoking is the biggest risk factor for lung cancer, there is a screening technique for high-risk former and current smokers that can detect lung cancer early — one that could potentially save your life.

Here are a few things you need to know about lung cancer early detection.

# We must be clear about the relative value of cessation & screening

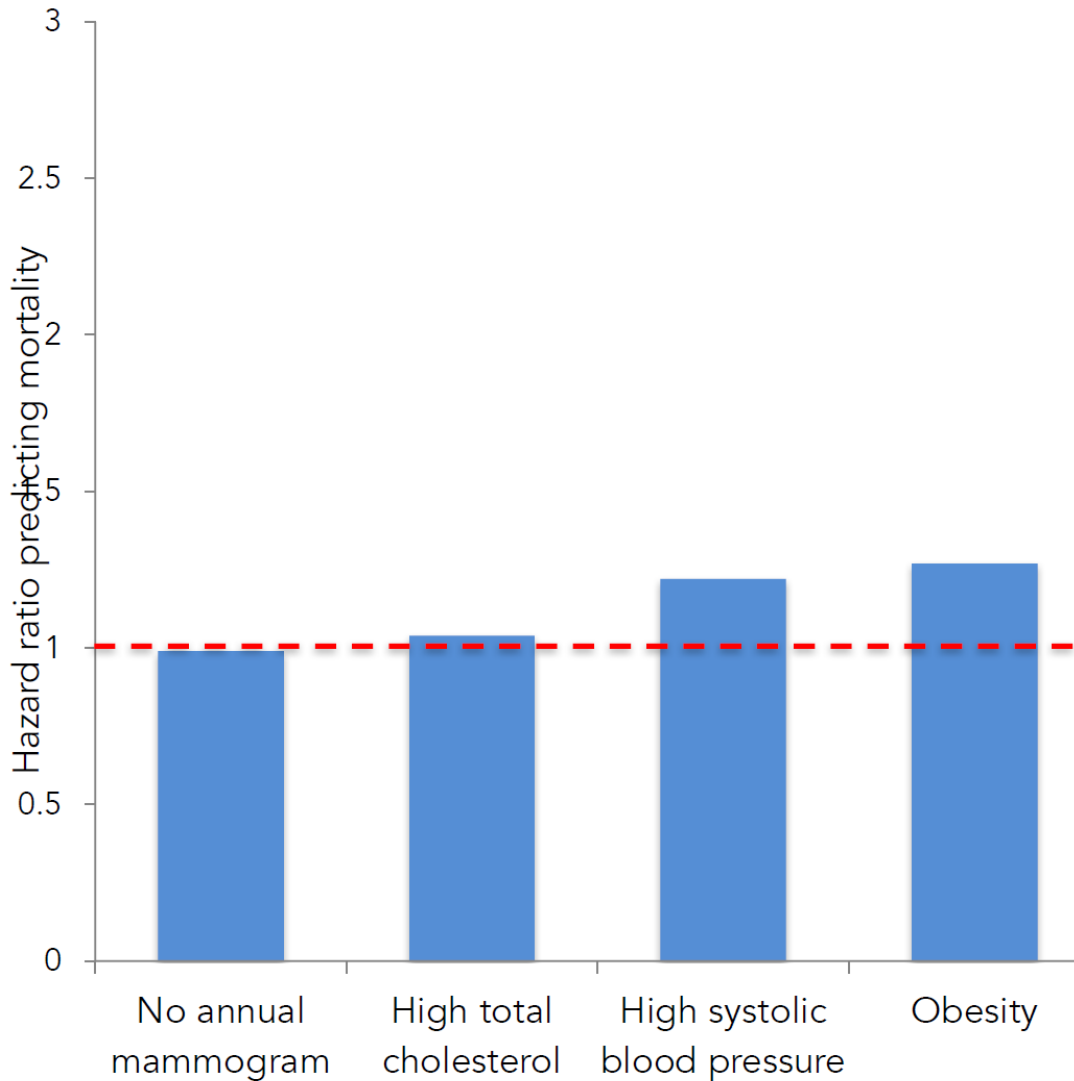
## **Saved by the Screen campaign**

“Quitting smoking at any time benefits your overall health *and* lowers your chances of developing lung cancer.

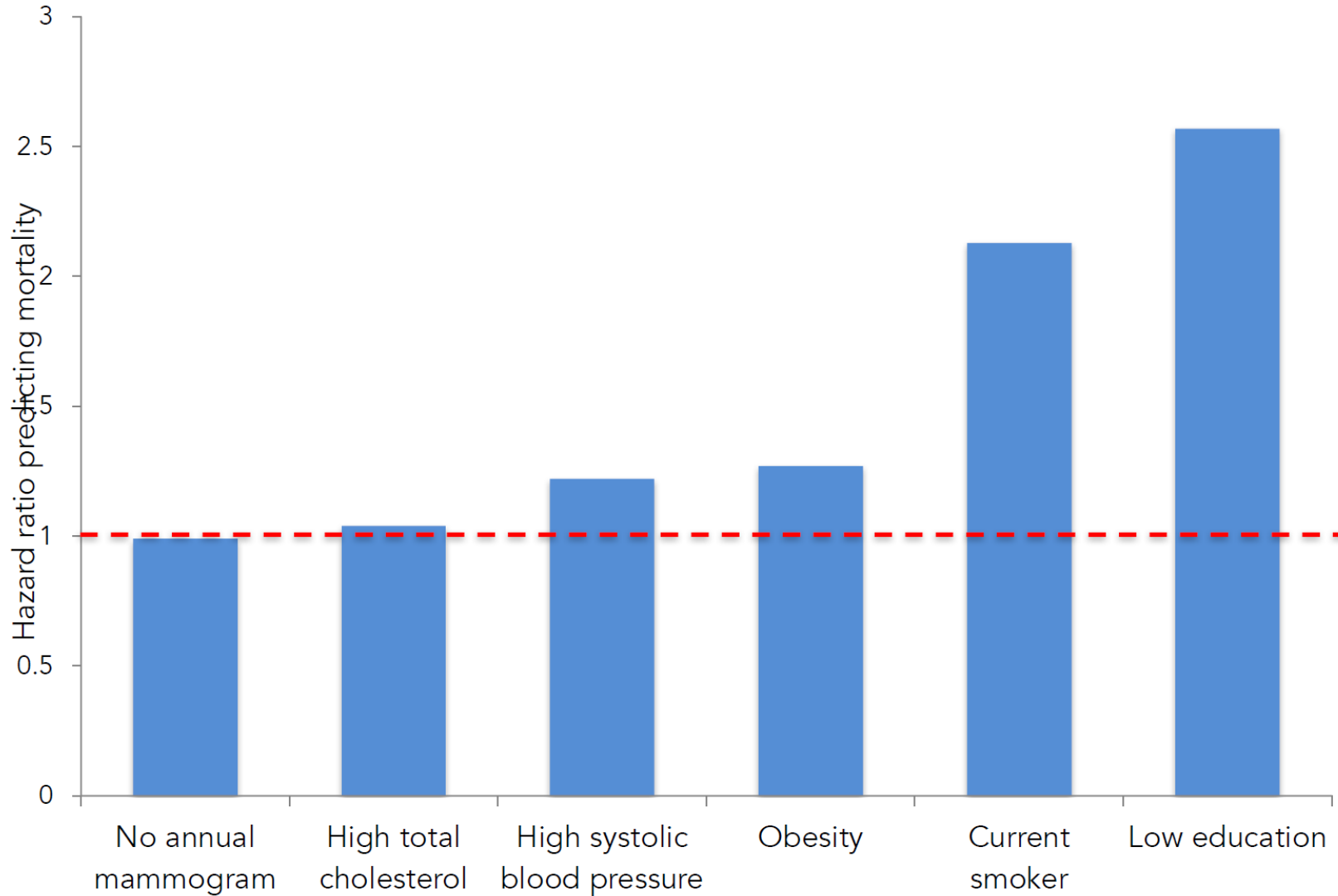
**However, if you meet the high-risk criteria, regular screening for lung cancer is your best chance at catching it early.”**

# What really 'causes' premature death?

Galea D&I Conference  
12/2017



# What really 'causes' premature death?



van Oort F, van Lenthe F, Mackenbach J. Material, psychosocial, and behavioural factors in the explanation of educational inequalities in mortality in the Netherlands. *J Epidemiol Community Health* 2005;59:214-220// Clarke R, Emberson J, Fletcher A, Breeze E, Marmot M, Shipley MJ. Life expectancy in relation to cardiovascular risk factors: 38 year follow-up of 19 000 men in the Whitehall study. *BMJ* 2009;339:b3513// Miller AB, Wall C, Baines CJ, Sun P, Teresa T, Narod SA. Twenty five year follow-up for breast cancer incidence and mortality of the Canadian National Breast Screening Study: randomised screening trial. *BMJ* 2014;348:g366//Chen Y, et al Association between body mass index and cardiovascular disease mortality in east Asians and south Asians: pooled analysis of prospective data from the Asia Cohort Consortium. *BMJ*. 2013 Oct 1;347:f5446.

# Questions?

- Thank you