



Veterans Affairs Tennessee Valley Healthcare System Lung Cancer Screening Program: Outcomes from May 1, 2019 to December 31, 2021



Allison Stranick BA¹, Carol Callaway-Lane DNP ACNP-BC^{1,2}, Pamela Humphrey MSN FN-BC², Bolatito Barnes RN², Nicole Salloum MD³, Trey Helton RN⁴, Chirayu Shah MD⁵, Eric Grogan MD MPH⁶, Jennifer Devan PsyD⁷, Lucy B. Spalluto MD MPH¹, Michael E. Matheny MD MS MPH^{1,3}, Susan Byerly AS¹, Daniel Park BS¹, Jennifer A. Lewis MD MS MPH^{1,2}

VA Tennessee Valley Healthcare System 1. Geriatric Research Education and Clinical Center (GRECC) 2. Medicine Service 3. Primary Care Service 4. Research Service 5. Radiology Service 6. Thoracic Surgery Service 7. Tobacco Cessation Program

Background

- Many Veterans are high-risk for lung cancer
- Screening with low-dose computed tomography (LDCT) reduces lung cancer mortality in high-risk populations
- Implementation of lung cancer screening (LCS) programs within VA has allowed interdisciplinary teams to provide evidence-based screening to high-risk Veterans
- VA Tennessee Valley Healthcare System (VA TVHS) Lung Cancer Screening Program started in 2018 with VA Partnership to Increase Access to Lung Screening (VA-PALS)
- VA TVHS LCS Programs follows United States Preventative Task Force (USPSTF) recommendations

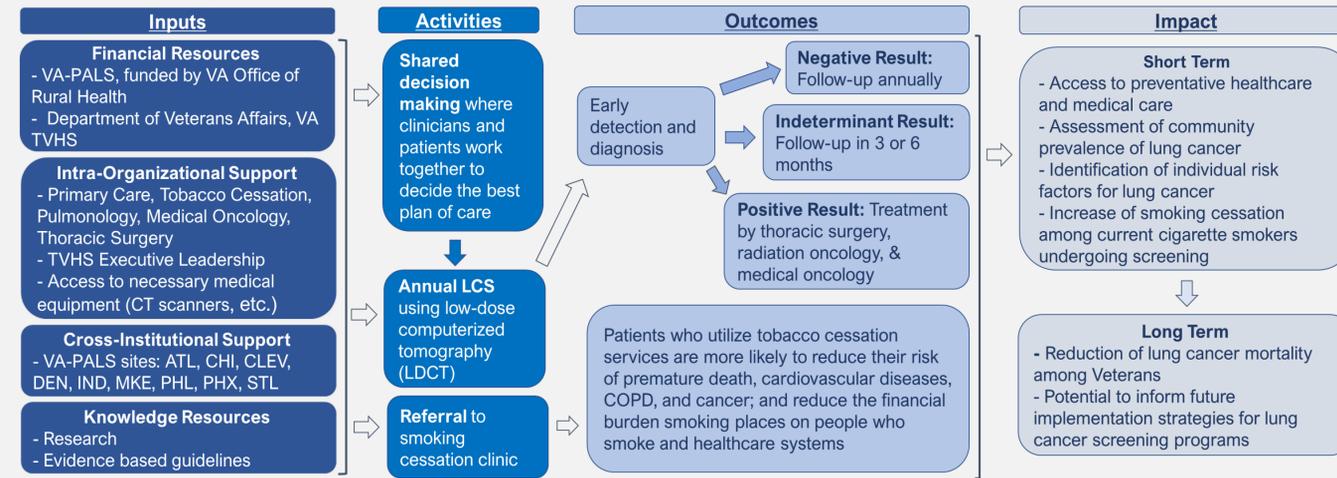
Objectives

- Collaboratively work with a team to understand the daily operations of a LCS program
- Learn the importance of early disease detection and identification of risk factors
- Strengthen analytical skills by evaluating program outcomes for the first two years and eight months of the program

Methods

- Attended program weekly meetings
- Developed logic model for high-level overview of the TVHS LCS Program
- Data Source: VA Corporate Data Warehouse (administrative database), electronic health record
- Chart reviews of Veterans diagnosed with lung cancer 12 months following screening
- Analysis: Descriptive statistics to calculate rates and proportions
- Outcomes: Veteran demographics, counts of initial plus subsequent lung cancer screening exams performed per month (CPT codes 71251, G0297, 71271 with screening descriptor), counts and proportions of lung cancers diagnosed including stage, histology, and treatment
- In program defined as screening ordered by program

Figure 1: Logic Model



Abbreviations: VA-PALS; Veteran Affairs Partnership to Increase Access to Lung Cancer Screening, ATL, Atlanta; CHI, Chicago; CLEV, Cleveland; DEN, Denver; IND, Indianapolis; MKE, Milwaukee; PHL, Philadelphia; PHX, Phoenix; STL, St. Louis

Figure 2: Lung Cancer Screening with LDCT by Month

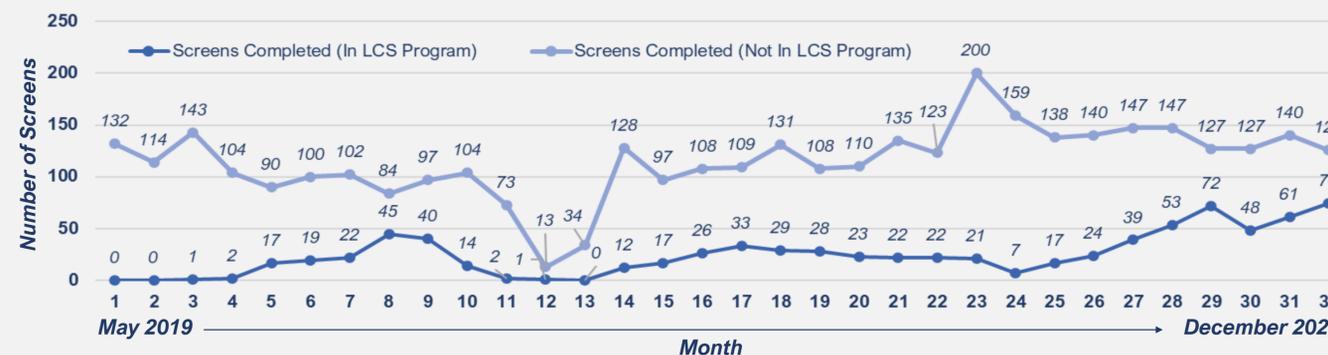


Table 2: Lung Cancer Outcomes

| | | Total n (%) n = 61 | 2019 n = 10 | 2020 n = 18 | 2021 n = 33 | In Program n(%) n = 14 | |
|------------------------------|----------------------------|-----------------------|----------------|----------------|----------------|---------------------------|--------|
| Stage | I | 21 (34) | 3 | 9 | 9 | 9 (64) | |
| | II | 7 (11) | 2 | 4 | 1 | 1 (7.1) | |
| | III | 12 (20) | 3 | 1 | 8 | 3 (21) | |
| | IV | 11 (18) | 1 | 3 | 7 | 0 (0.0) | |
| | Unable to Identify Stage | 10 (16) | 1 | 1 | 8 | 1 (7.1) | |
| Histology | Non-Small Cell Lung Cancer | Adenocarcinoma | 24 (39) | 4 | 9 | 11 | 3 (21) |
| | | Squamous Cell | 18 (30) | 1 | 5 | 12 | 3 (21) |
| | | Other | 16 (26) | 5 | 3 | 8 | 6 (43) |
| | Small Cell Lung Cancer | 0 (0.0) | 0 | 0 | 0 | 0 (0.0) | |
| Unable to Identify Histology | 3 (5.0) | 0 | 1 | 2 | 2 (14) | | |
| Treatment | Curative Thoracic Surgery | 19 (31) | 5 | 6 | 8 | 4 (29) | |
| | Curative Radiation | 19 (31) | 3 | 7 | 9 | 6 (43) | |
| | Curative Chemoradiation | 10 (16) | 2 | 1 | 7 | 3 (21) | |
| | Palliative Chemotherapy | 10 (16) | 0 | 2 | 8 | 1 (7.1) | |
| | Palliative Immunotherapy | 2 (3.2) | 0 | 1 | 1 | 0 (0.0) | |
| | Patient Declined Treatment | 1 (1.6) | 0 | 0 | 1 | 0 (0.0) | |

Table 1: Veteran Characteristics At Baseline LCS

| | Total n(%) | Rural n(%) | Non-Rural n(%) |
|----------------------------------|------------|------------|----------------|
| | 3,290 | 2,029 (62) | 1,261 (38) |
| Gender | | | |
| Male | 3,089 (94) | 1,912 (58) | 1,177 (36) |
| Female | 198 (6) | 117 (24) | 81 (36) |
| Race | | | |
| White | 2,621 (80) | 1,750 (53) | 871 (27) |
| Black or African American | 421 (13) | 125 (40) | 296 (90) |
| Asian | 4 (0.1) | 0 (0) | 4 (0.1) |
| American Indian or Alaska Native | 21 (0.6) | 13 (0.4) | 8 (0.2) |
| Unknown | 211 (6) | 136 (4) | 75 (2) |
| Age | | | |
| <50 | 64 (20) | 31 (1) | 29 (1) |
| 51-60 | 687 (20) | 402 (12) | 285 (8) |
| 61-70 | 1,481 (45) | 907 (28) | 574 (17) |
| 71-80 | 1,018 (31) | 663 (20) | 355 (11) |
| >81 | 37 (1) | 22 (0.6) | 15 (0.4) |
| Comorbidities | | | |
| History of COPD | 1,387 (42) | 881 (27) | 506 (15) |
| History of CAD | 464 (14) | 302 (9) | 162 (5) |

Abbreviations: COPD; Chronic obstructive pulmonary disease, CAD; Coronary artery disease

Results

- Among all Veterans screened, approximately 94% were male, 62% lived in rural communities, and 80% were white
- From May 1, 2019 to December 31, 2021, VA TVHS screened 3,290 unique Veterans, 518 (15.7%) in the LCS program
- A total of 4,481 LCS exams (initial plus subsequent) were completed, with 791 (17.7%) done through the LCS program
- 61 Veterans were diagnosed within 12 months of a screening exam, 14 (23%) part of the LCS program
- Among individuals who were diagnosed with lung cancer within 12 months of screening, approximately 34% were stage 1, 11% stage 2, 20% stage 3, and 11% stage 4
- Of Veterans diagnosed with screen-detected lung cancer 48 (79%) received curative intent: thoracic surgery 19 (31%), radiation 19 (31%) or chemoradiation 10(16%)

Conclusion

- The opportunity to collaborate with the lung cancer screening program at VA TVHS has been in integral part of my experience during the Vanderbilt University Master of Public Health (MPH) Program
- As I move forward and begin my professional career within public health, I am better prepared to collaborate with interdisciplinary teams to achieve the goal of reducing cancer mortality among all populations because of this experience