

Improving CT Imaging Lung Cancer Screening Rates at LVHN Primary Care Clinics

Lane Polk
Lehigh Valley Health Network

Frank Sperrazza DO
Lehigh Valley Health Network, Frank_A.Sperrazza@lvhn.org

Melanie B. Johnson MPA
Lehigh Valley Health Network, melanie_b.johnson@lvhn.org

Follow this and additional works at: <https://scholarlyworks.lvhn.org/select-program>



Part of the [Medical Education Commons](#)

Let us know how access to this document benefits you

Published In/Presented At

Polk, L., Sperrazza, F. & Johnson, M.B. (2022). *Improving CT imaging lung cancer screening rates at LVHN primary care clinics*. Poster presented at Lehigh Valley Health Network, Allentown, PA.

This Poster is brought to you for free and open access by LVHN Scholarly Works. It has been accepted for inclusion in LVHN Scholarly Works by an authorized administrator. For more information, please contact LibraryServices@lvhn.org.

Improving CT Imaging Lung Cancer Screening Rates at LVHN Primary Care Clinics

Lane Polk MS4, Frank Sperrazza DO, Melanie B. Johnson MPA

Lehigh Valley Health Network, Allentown, Pennsylvania

Introduction

- Lung cancer screening with low-dose CT scans at LVHN has historically been 2-3% of the eligible population (consistent with national average)¹⁻⁴
 - Screening criteria (as of 2020): 55-80 years old, at least a 30 pack-year smoking history, currently smoke or quit within past 15 years
- USPSTF grade B determination. Medicare, Medicaid, and private insurer coverage since 2015
- Lung cancer = leading cause of cancer deaths. Screening has been found to reduce mortality from lung cancer by 16-20%⁵
- To improve lung cancer screening rates, a patient outreach program was employed over the past two years at 5 LVHN Primary Care clinics
- Involved outreach 2 weeks before clinic visits to facilitate eligible patient identification, gauge patient interest, and increase physician awareness
- As a result of this initiative, the screening rate for those who completed a primary care visit after contact via the outreach program was 19.4%.⁶
- There remained a significant portion of eligible patients (80.6%) who didn't complete lung cancer screening even after completing a primary care visit following outreach

Problem Statement

This project investigates the causes of missed lung cancer screenings for eligible patients who completed clinic visits at LVHN Primary Care practices after being contacted by an LVHN pre-visit lung cancer screening outreach program.

Methods

EMR Algorithm Criteria

- Aged 55-80
- Scheduled primary care visit in the forthcoming 2 weeks
- Current or a former smoker
- Not receiving treatment for conditions that precluded screening
- No screening or chest CT in 12 months

Outreach

- Via telephone, mailed, and/or EHR portal contacts to potentially eligible patients from 5 LVHN Primary Care practices.⁶
- Screening eligibility + smoking history verification
- Gauge patient interest in screening

Provider Communication

- Patient-specific notification memos sent via EPIC 3-4 days before upcoming clinic visits
- Eligibility status + pack-year history
- Prompt to discuss screening (w/ SDM) at upcoming visit
- Memos not re-sent for rescheduled visits

Study Population

- Patients who completed their scheduled clinic visits but did not complete lung cancer screening post-visit were included in this IRB approved, HIPAA compliant retrospective cohort study.

Data Collection

- Chart review conducted via Epic EHR system
- Webi system - data extraction
- Redcap /Excel - data collection
- Patients designated to categories based on root causes of missed lung cancer screening
- Sub-stratification (rescheduled visits, reasons for refusal)

Results

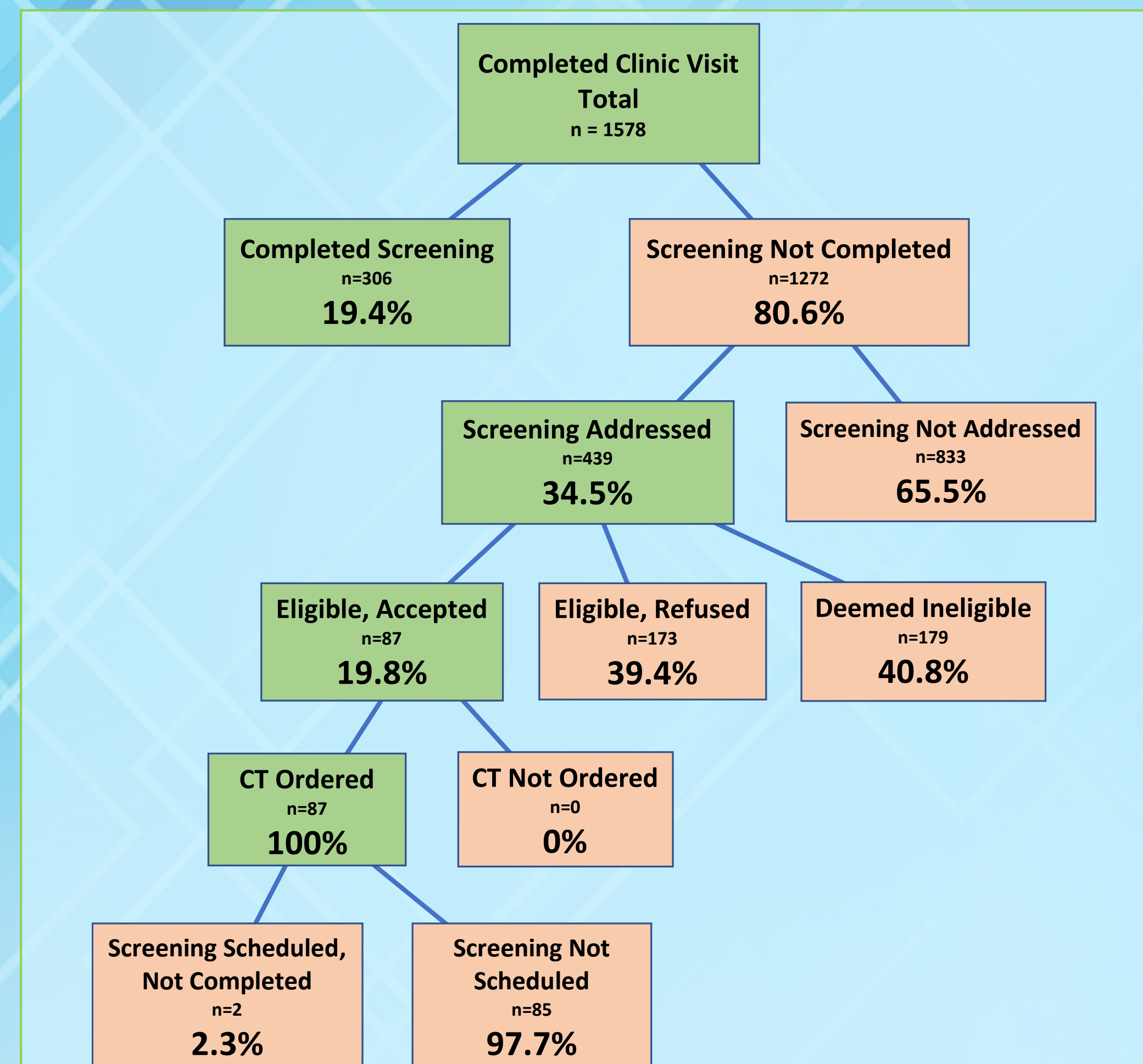


Figure 1. Percentage Breakdown of Root Causes for Missed Lung Cancer Screening in Eligible Patients at Each Stage of the Clinic Visit Process.

Cause of Missed Screening	# of Patients	% of total	% Rescheduled Visits
Screening Not Addressed	833	65.5%	23.8% (198)
Deemed Ineligible	179	14.1%	
Refused/Postponed	173	13.6%	
Screening Not Scheduled	85	6.7%	6.4% (28)
Screening Scheduled, Not Completed	2	0.16%	
CT Order Not Placed/Placed Incorrect	0	0.0%	
Total	1272		17.8% (226)

Table 1. Stratification of Root Causes for Missed Lung Cancer Screening in Eligible Patients Completing Primary Care Visits After Outreach (*Screening addressed at 39.3% of original date visits and only 12.4% of rescheduled visits).

Reasons For Eligible Patient Refusal of Lung Cancer Screening

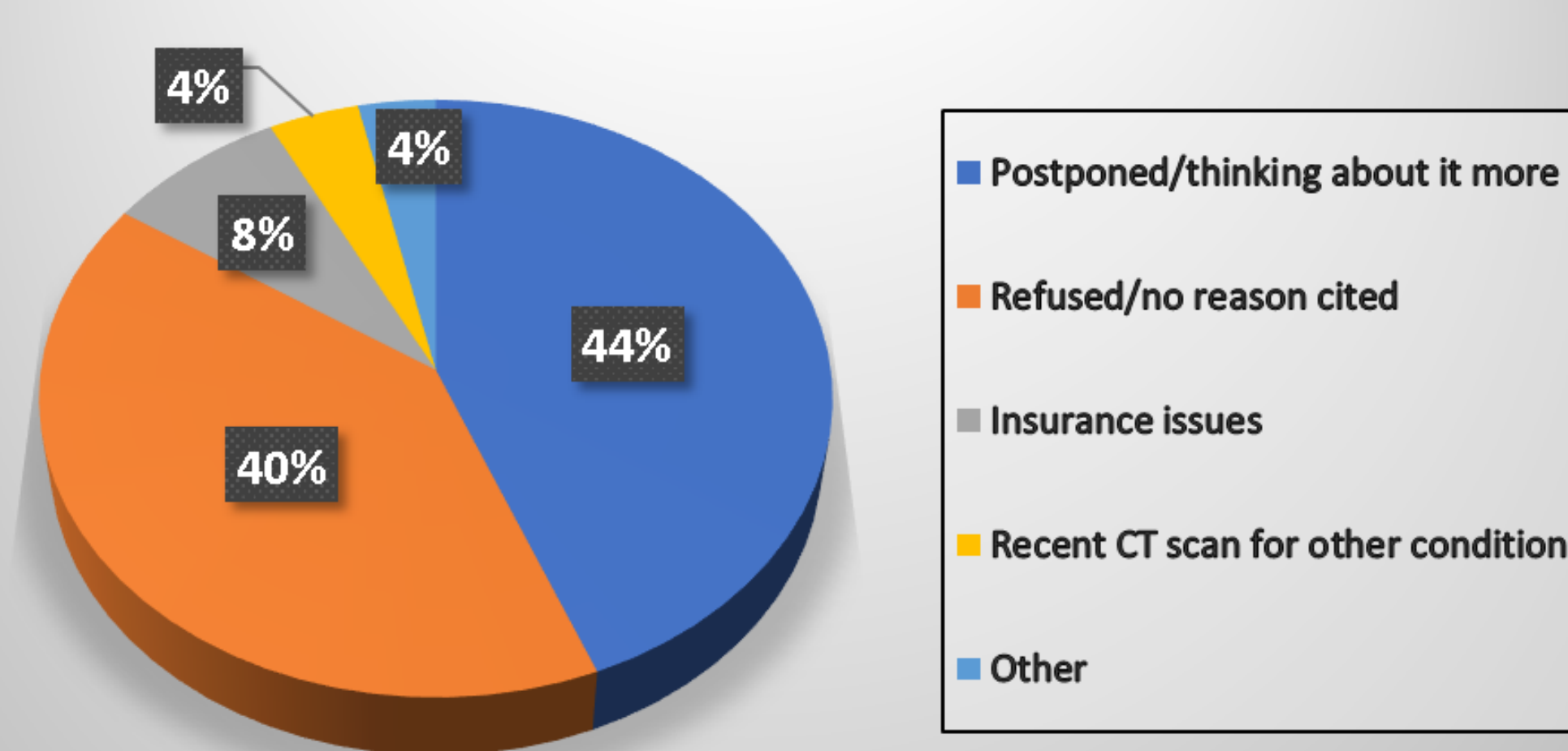
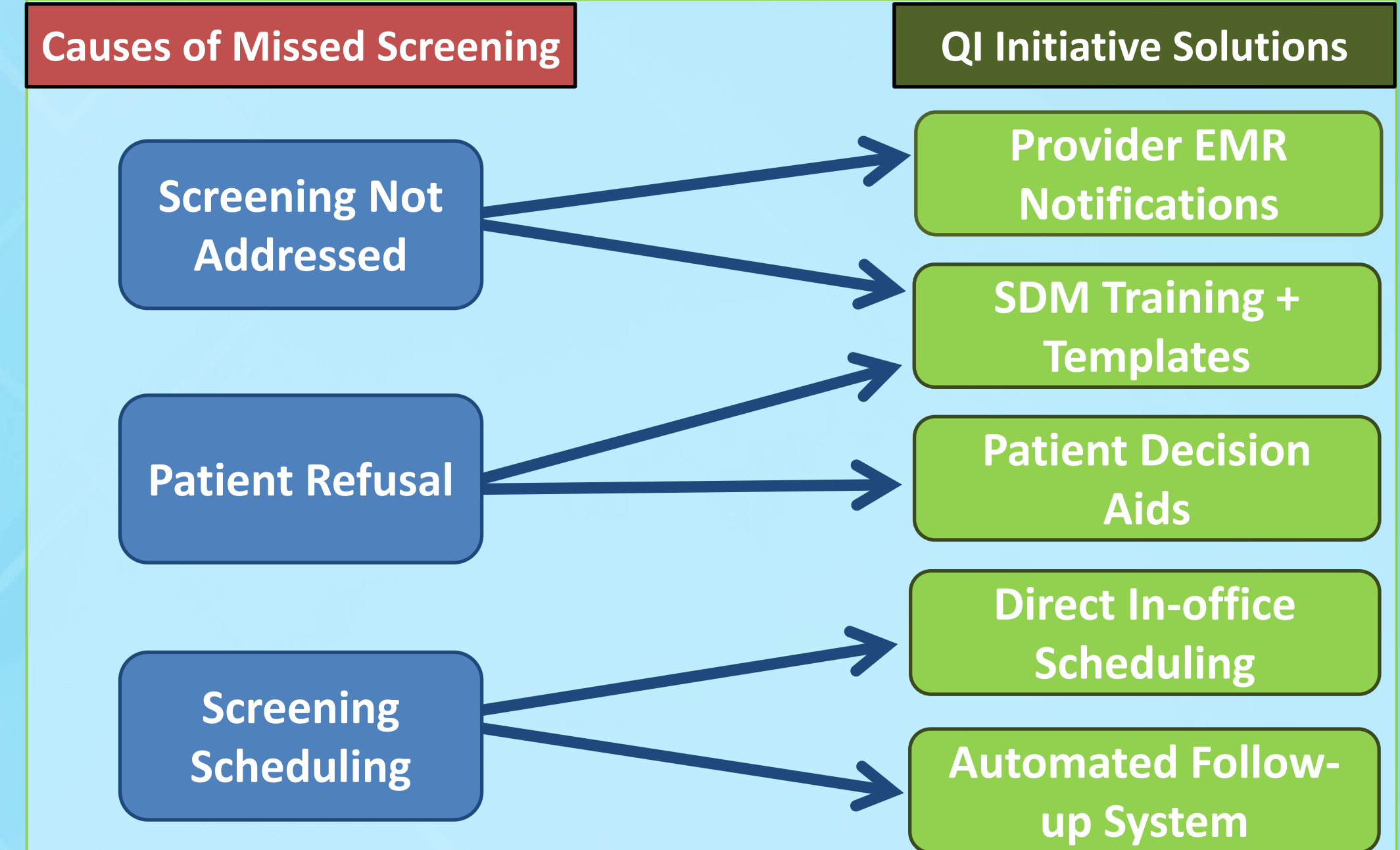


Figure 2. Reasons Cited by Eligible Patients For Refusal/Postponement of Lung Cancer Screening With Low-Dose Chest CT Scan.

The study cohort included 1272 patients who completed primary care visits but didn't complete lung cancer screening (Figure 1). 65.5% (n=833) of these patients did not have lung cancer screening addressed at their visit, with 23.8% of these visits being rescheduled visits. Screening wasn't addressed at 87.6% of all rescheduled visits (Table 1). Out of those who did have screening addressed (n=439), 40.8% (n=179) were deemed ineligible for screening and 39.4% (n=173) refused or postponed screening (reasons for refusal shown in Figure 2). All patients that were confirmed as eligible (n=87) for screening had a CT study order placed. Out of those patients with orders placed, 97.7% (n=85) didn't schedule a date for screening.

Discussion



Relationship to SELECT

Health Systems

- Identifies systems- and practice-based causes of missed lung cancer screening
- QI initiatives and process/practice changes recommended to target root causes

Increased screening rates = higher detection + prevention of lung cancer = improved outcomes and decreased costs for healthcare system

Values-Based Patient-Centered Care

- Increases shared-decision making discussions
- Enhanced understanding of patient refusal/postponement of screening
- Promotes motivational interviewing for screening

Relationship to Self-Directed Learning Goals

- Self-assessment:** Bi-weekly organizer + checklists: managing competing priorities and improving time management
- Location/Utilization of Resources:** Pubmed - literature review, Epic EHR system - chart review/data collection, Redcap - data collection/analysis, faculty mentors - consulted for content guidance
- Appraisal of Resources:** Monthly check-ins with mentor and co-author. Pubmed, Epic, Redcap - frequent review and interpretation of literature/data to ensure effectiveness

Limitations

- Inaccurate/insufficient chart documentation in Epic
- Scope - specific patient population (contacted by outreach, screening interest, clinic visit), practice/hospital network variability

Conclusion

This study elucidates the primary causes of missed lung cancer screenings in eligible patients who complete primary care clinic visits and express pre-visit interest in screening. Based on our findings, future quality improvement initiatives targeting physician awareness of addressing screening, provider SDM training, patient decision support, and screening scheduling will have the greatest impact on improving lung cancer screening rates.

References

- Final Recommendation Statement-Lung Cancer: Screening. U.S. Preventive Services Task Force. March 2021. Accessed Nov 15, 2021. <https://uspreventiveservicestaskforce.org/uspstf/recommendation/lung-cancer-screening>
- Despite Insurance Coverage, At-Risk People Not Getting Life-Saving Lung Cancer Screenings. June 2021. <https://ehp.org/articles/doi/https://doi.org/10.1289/ehp.2020.129.1291>
- Richards TB, Soman A, Thomas CC, et al. Screening for Lung Cancer - 10 States, 2017. *MMWR Morb Mortal Wkly Rep.* 2020;69(8):201-206. Published 2020 Feb 28. doi:10.15585/mmwr.mm6908a1
- State Lung Cancer Screening Coverage Toolkit. American Lung Association. May 2021. <https://www.lung.org/lung-health-diseases/lung-disease-lookup/lung-cancer/saved-by-the-scan/resources/state-lung-cancer-screening>
- Pinsky PF, Church TR, Izmirlian G, Kramer BS. The National Lung Screening Trial: results stratified by demographics, smoking history, and lung cancer histology. *Cancer.* 2013;119(22):3978-3983. doi:10.1002/onc.28326
- Sperrazza F, Johnson M, B., Shaik, K, Burgess, N, Reim, H, Greenberg, G. Why Butts Matter: A Primary Care Approach to Lung Cancer Screening. Poster Presented at: (STFM) Society of Teachers of Family Medicine, Conference on Practice and Quality Improvement, Phoenix, AZ. Presented Dec 5, 2019.

© 2018 Lehigh Valley Health Network