

The Best Care One-Lung Program: A Pathway for Lung Cancer Screening in Primary Care

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Introduction

Background: Lung cancer screening of at-risk individuals by annual low-dose CT (LDCT) scanning increases survival.¹ Exposure to tobacco smoke is a common risk factor for lung cancer and chronic obstructive pulmonary disease (COPD).² COPD elevates lung cancer risk.²

Current practice: Primary care physicians (PCPs) identify and refer patients aged 55 to 80 with a 20-year smoking history for risk assessment.³ Individuals with a ≥2% 6-year risk of developing lung cancer are eligible for LDCT screening.³

The problem: Access to screening is limited by low rates of patient identification and referral.⁴

A new pathway: The Best Care One-Lung program in primary care leverages the unique position of Best Care COPD*, supporting PCPs in the identification, shared decision-making, and referral of high-risk individuals.

*Best Care COPD is an established Canadian integrated disease management program that embeds certified respiratory educator-case managers (CRE-CM) within primary care practices to support PCPs to deliver guideline-concordant care.^{5,6,7}

Methods

Objective: To describe preliminary results from the Best Care One-Lung program in a pilot region (Hamilton, Ontario) from 1st October 2024 – 30th June 2025.

Study Population: Five CRE-CMs from 21 primary care practices identified patients aged 55 to 80 with a 20-year smoking history from Best Care COPD, primary care EMR searches, and PCP referrals.

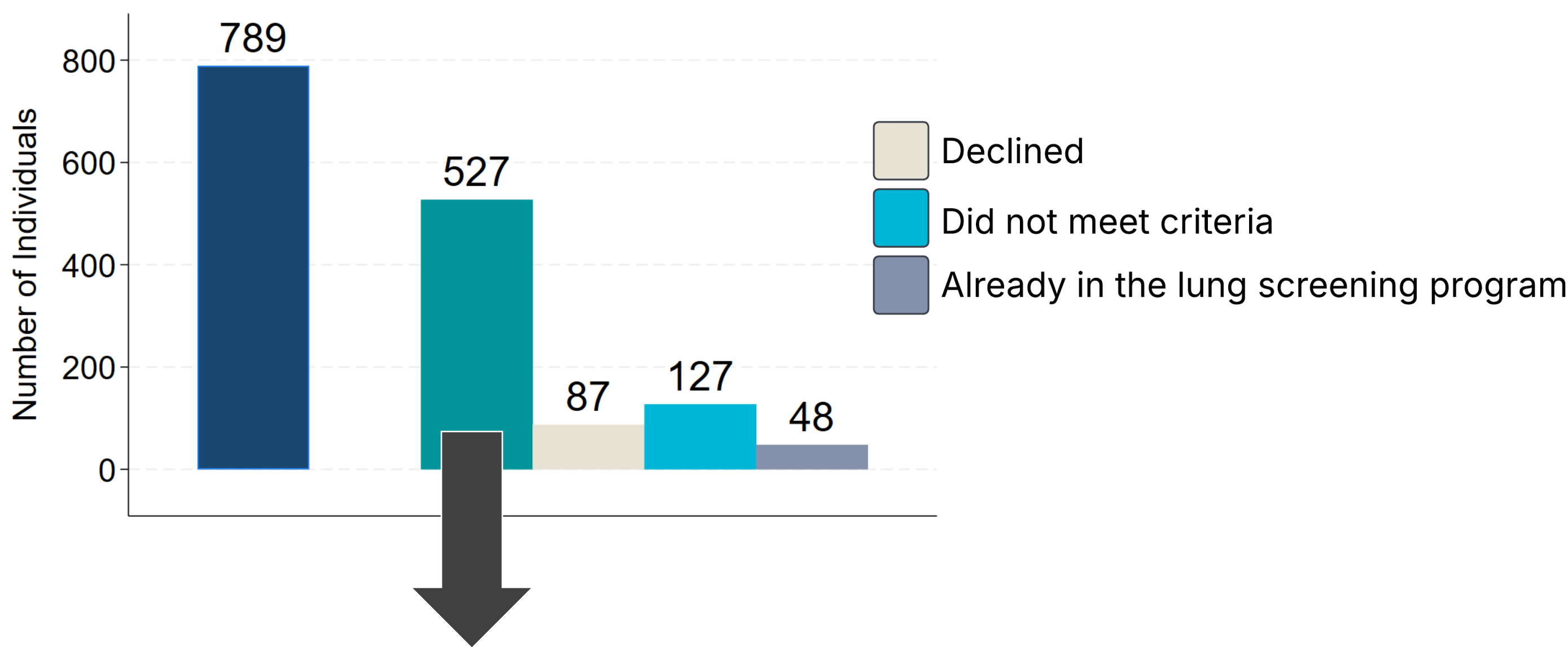
Study Procedure: Identified patients were invited to a Best Care One-Lung appointment led by CRE-CMs. Appointments included spirometry (if no existing COPD diagnosis), completion of the PLCom2012noRace calculator⁷, and, for individuals with a lung cancer risk ≥2%, shared decision-making and PCP referral to the screening program.

References

1. Aberle DR, *et al.* Reduced lung-cancer mortality with low-dose computed tomographic screening. N Engl J Med. 2011 Aug 4;365(5):395-409. <https://doi.org/10.1056/NEJMoa1102873> 2. Global Strategy for Prevention, Diagnosis and Management of COPD: 2025 Report <https://goldcopd.org/2024-gold-report/>
3. Cancer Care Ontario. Ontario Lung Screening Program. Available at: <https://www.cancercareontario.ca/en/cancer-care-ontario/programs/screening-programs/ontario-lung-screening-program> 4. Cavers, D., *et al.* Understanding patient barriers and facilitators to uptake of lung screening using low dose computed tomography: a mixed methods scoping review of the current literature. Respir Res. 2022, 23, 374. <https://doi.org/10.1186/s12931-022-02255-8> 5. Ferrone, M., *et al.* The impact of integrated disease management in high-risk COPD patients in primary care. Npj Primary Care Respiratory Medicine, 2019, 29(1), 8. 6. Hussey, A. J., *et al.* Integrated Disease Management for Chronic Obstructive Pulmonary Disease in Primary Care, from the Controlled Trial to Clinical Program: A Cohort Study. International Journal of COPD, 2021, 16, 3449–3464. <https://doi.org/10.2147/COPD.S338851> 7. Tammemägi M, *et al.* Selection of individuals for lung cancer screening based on risk prediction model performance and economic factors – The Ontario experience. Lung Cancer, 2021, 156, 31–40. <https://doi.org/10.1016/j.lungcan.2021.04.005>

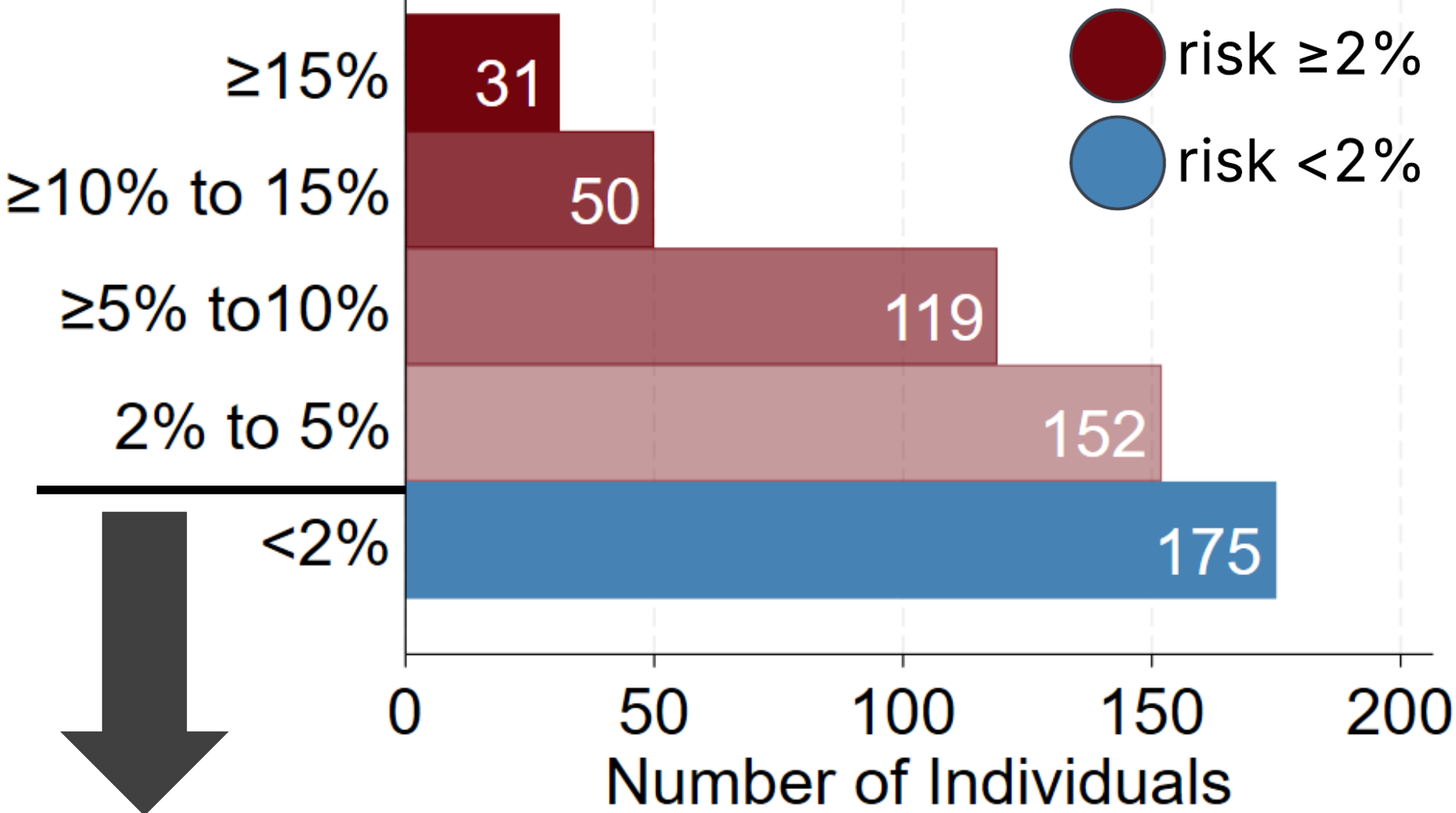
Results

789 identified, aged 55-80 with 20-years smoking



527 (67%) risk assessed in primary care

Risk of developing lung cancer in the next 6-years

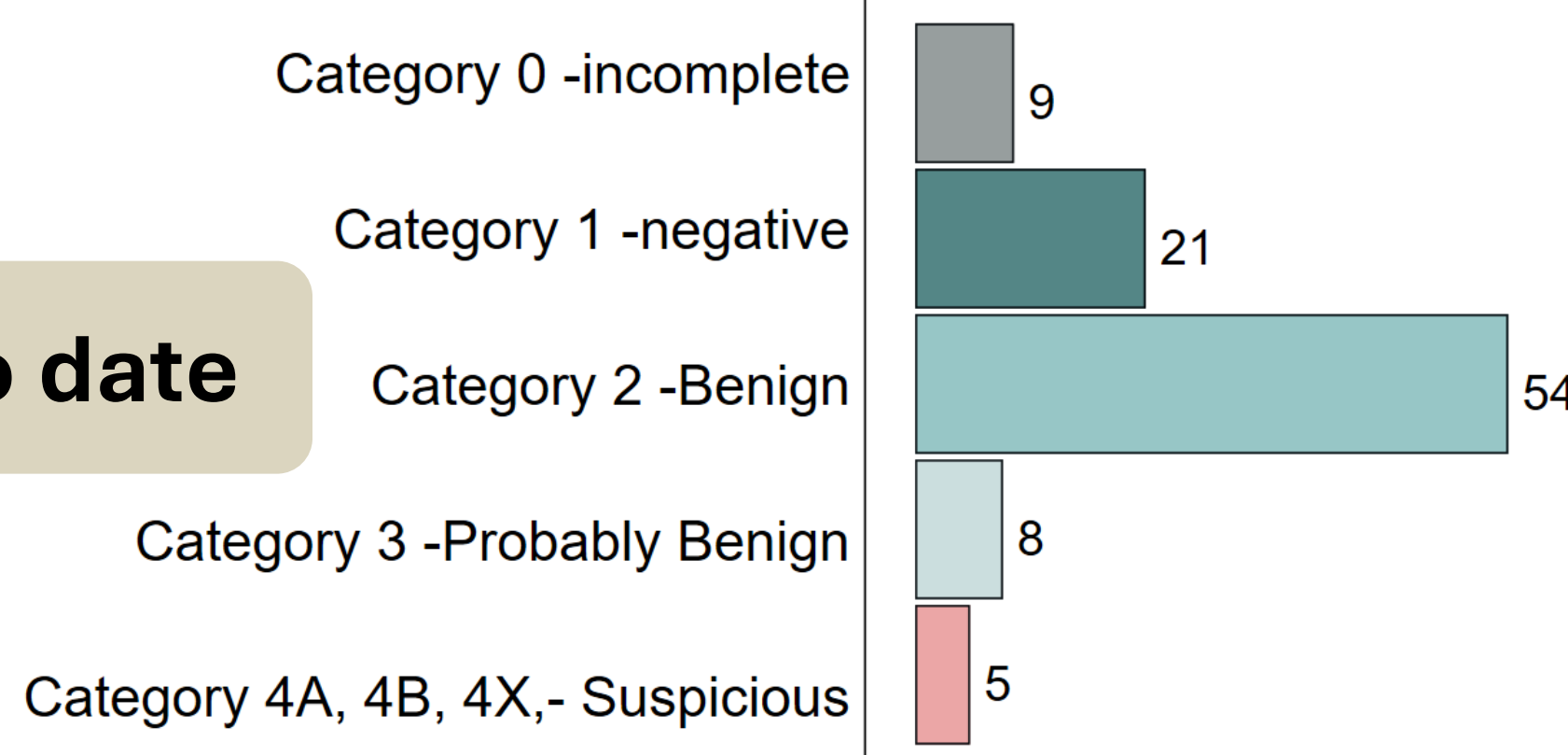


352 (67%) risk ≥2% referred for LDCT screening

For the **352** people (referred for screening):

- **Median** 6-year risk **5.7%** IQR (3.5,9.4)
- **Mean** 6-year risk **7.4%** (SD 5.8)
- Risk **ranged** from **2%** to **46%**

RADS assessment categories from LDCT



97 LDCT screening results collected to date

Baseline Characteristics of risk assessed patients

	N=527
Age, m (SD)	66.3 (6.0)
Sex, n (%) female	271 (51%)
Body mass index, m (SD)	29.5 (6.5)
Education, n (%)	
≤high school	283 (54%)
post high school & college	226 (43%)
postgraduate & professional	18 (3%)
COPD diagnosis n (%)	349 (66%)
Smoking pack years m (SD)	42.6 (27.2)
Current smokers n (%)	244 (46%)

Discussion & Conclusion

- We developed and pilot tested Best Care One-Lung, a program combining early diagnosis of lung cancer with COPD diagnosis and treatment, as recommended by the GOLD guidelines.²
- Of the 789 people approached, 527 were risk assessed including 349 with COPD (66%), and 352 were enrolled for annual low-dose CT screening. The mean lung cancer risk in this population was 7.4%, therefore we predict up to 26 early-stage lung cancers will be detected over the next 6 years.⁷ In the population referred for screening, risk ranged from 2% to 46%.
- The Best Care COPD program co-manages over 10,000 patients with COPD annually at >300 sites across Ontario, Canada. We plan to spread and scale Best Care One-Lung across our network.