OPTIMIZING EARLY DETECTION IN LUNG CANCER SCREENING

AFHTO Conference
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Background

Lung Cancer Insights

- 70% of lung cancer is diagnosed at stage III / IV in Canada[1]
- In 2020, 7,100 people were expected to die from lung cancer in Ontario. More than breast, colon and prostate cancers combined[2]
- Screening with LDCT can find lung cancer at an early stage[2]
- When lung cancer is found and treated early, the chances of successful treatment are better[3]

Lung Cancer Realities in Primary Care

Physician perspective:
- Smoking rates higher in Renfrew county, competing demands during patient visits, no EMR tools specific to lung cancer screening, stigma and access challenges

Respiratory Therapist perspective:
- Early signs and symptoms of lung cancer share similarities with COPD, cough, shortness of breath and wheezing. Spirometry alone could lead to a misdiagnosis. A chest x-ray after a positive spirometry can help rule out alternate causes
- Quitting smoking or decreasing at any stage of life is beneficial

Ontario Lung Cancer Screening Program[4]

Referral Criteria: Age 55-74, current or former smokers who smoked cigarettes daily for at least 20 years (not necessarily in a row

Eligibility Criteria: After referral, a screening navigator will assess eligibility into LCS program; >= 2% in developing lung cancer in the next 6 years using the Tammemägi PLCOm2012 risk prediction model

Referral Criteria ≠ Eligibility Criteria

~ 34% in ON LCS pilot were referred but not eligible[5]

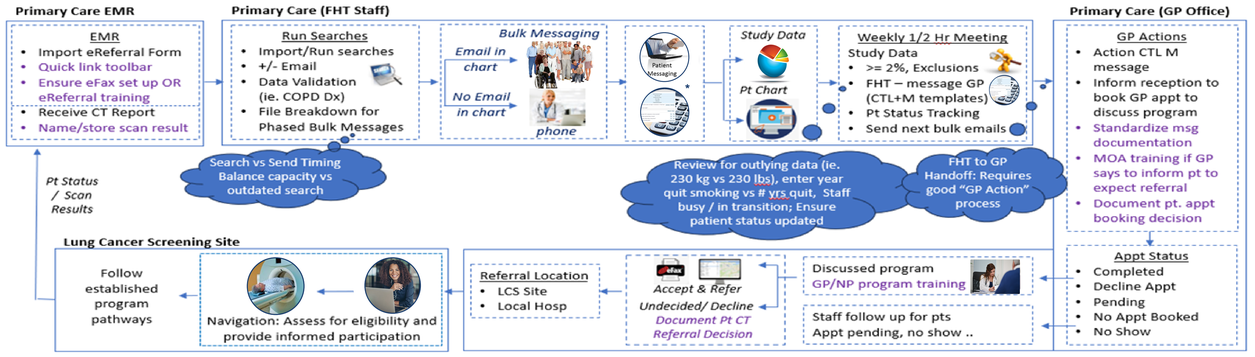
Pilot Purpose

To use a population-based approach and leverage digital health technology so the ADFHT will improve lung cancer screening rates; AND have referrals meet both referral and eligibility criteria.

Pilot Design

EMR Searches

Phase 1: age (55-74), + email, + member status, smoking status (c/x/blank), + COPD, x Lung Cancer (N=158)
Phase 2: same as above but no COPD (N=1,481)
Total N = 1,639/15,500 (10.5% roster)



* Tammemägi PLCOm2012 risk prediction model

Pilot Findings

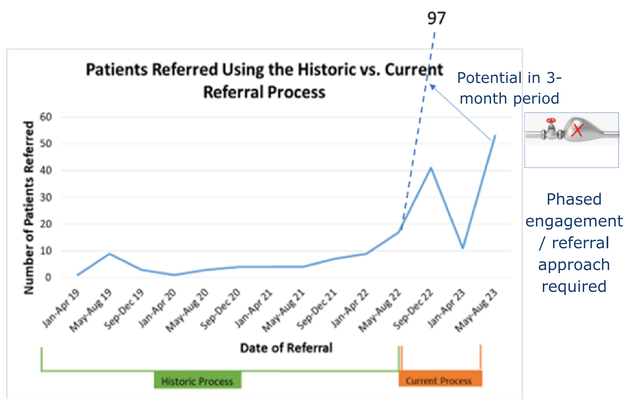
Aggregate Results	N	%
Search: age 55-74, smoker status (c/x/b), x lung cancer, email, active status	N = 1639	
# Forms completed (email response rate)	829	50.6%
Inclusion Criteria Met (Age & Smoking Status)	377	23.0%
Exclusion Criteria Met (N=44 had exclusions)	333	20.3%
>= 2% risk score	130	7.9%
Referrals (to date) * Up to Aug 17/2023	97	5.9%

COPD Search Results	N	%
Search: age 55-74, smoker status (c/x/b), x lung cancer, email, active status + COPD Dx	N = 158	
# Forms completed (email response rate)	68	43%
Inclusion Criteria Met (Age & Smoking Status)	68	43%
Exclusion Criteria Met (N=0 had exclusions)	68	43%
>= 2% risk score	50	32%
Referrals (to date) * Up to Aug 17/2023	38	24%

73.5% (50/68) of COPD pts that met inclusion and exclusion criteria had risk score >= 2%

33 non-referrals (130-97) could mean pt declined program referral, GP/NP didn't refer due to recent scan, referral possible pending (appt delays); only pts with risk score >= 2% were referred

Increase in Lung Cancer Screening Referrals



Potential in 3-month period

Phased engagement / referral approach required

Patient Comments and Insights

- "Appreciate that doc is thinking about them and following up with screening"
- "Why am I getting a lung cancer screening questionnaire when I just got referred?"
  - CT referral sent (separate from this pilot) after EMR search and questionnaire sent (N=1)
- During follow up, patient felt stressed talking about smoking cessation discussions all the time, but after follow up call was reconsidering referral

Data Validation (EMR Search vs Patient Responses)

- High-risk EMR search with COPD diagnosis
- Risk calculator asks if pt. has COPD diagnosis
- 16 / 158 (10%) pts said NO to COPD; EMR search included

Chart Audit
- 10 should have said Yes; recalculated risk score
  - 1 pt score changed to be >= 2%
- 6 were correct in saying No
  - 0 pt scores changed +/- >= 2%
- LCS site screening navigator still does risk score

Opportunity in primary care to educate patient and validate certain data

Pilot Demonstrates

- The feasibility of leveraging EMR and patient engagement digital health tools to identify high risk patients for lung cancer screening using a population-based approach
- Patients can be rapidly identified for referral but a phased approach is best to manage internal administration and external CT capacity demands
- Patient's acceptance of program seems good based on very minimal negative patient feedback (but no patient experience survey was completed by the time of this presentation)
- A reduction in Provider barriers to lung cancer screening based on change in referral patterns
- Administrative implementation resources key to support program process
- Opportunity for a "lung health" approach by including smoking history, COPD and lung cancer screening forms (This pilot included smoking history forms)

What's Next

- Screen patients with no email address
- Screen patients with email address who did not complete risk calculator (50.8% response rate)
- Update processes based on pilot learnings
- How often repeat questionnaire to patients
  - Annually?
  - Patients with scores just under 2.0% (ie. 1.9 score in +1 yr will be > 2% due to year older and extra year smoking history)?
- Continue to assess program outcomes (ie. referred patients not yet scanned, results pending, physician feedback on reducing barriers, patient experience survey)
- Consider NP (who has no rostered patients) to manage program on behalf of GP's (simplified training, consistent messaging and standardized documentation)

Arnprior & District Family Health Team

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