HOW PATIENT NAVIGATORS FACILITATE GETTING THE RIGHT PATIENTS SCREENED FOR LUNG CANCER

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Lung Cancer

- Lung cancer is the leading cause of cancer-related death in United States.
- It is estimated that this year over 150,000 people will die from lung cancer in United States.
- More patients will die from lung cancer than from breast, prostate and colorectal cancer combined.
- Over 70% of patients with lung cancer are diagnosed at an advanced stage, when cure is no longer an option.

Siegel RL CA Cancer J Clin 2018
National Lung Screening Trial

Eligibility:
• Age 55-74; asymptomatic
• Current or former smoker with 30 pack-year history
• Former smoker, quit within last 15 years

Randomized to Chest CT or chest x-ray yearly for 3 years

Chest CT: relative reduction in lung cancer mortality of 20%

The USPSTF recommends annual screening for lung cancer with low-dose computed tomography (LDCT) in adults aged 55 to 80 years who have a 30 pack-year smoking history and currently smoke or have quit within the past 15 years.

Screening should be discontinued once a person has not smoked for 15 years or develops a health problem that substantially limits life expectancy or the ability or willingness to have curative lung surgery.

Medicare Lung Cancer Screening Recommendation Feb 2015

- Once-per-year LDCT in 55-77 years old either current smokers or have quit smoking within the last 15 years
- A tobacco smoking history of at least 30 ‘pack years’
- Written order from a physician or qualified non-physician practitioner that meets certain requirements
- A visit for counseling and shared decision-making on the benefits and risks of lung cancer screening
- Specific coverage eligibility criteria for radiologist and radiology imaging centers consistent with NLST protocol
Lung Cancer Screening Rates in United States

• Based on the National Health Interview Survey less than 4% of eligible smokers received lung cancer screening in the previous year, and rates had not significantly changed from 2010 to 2015

Jemal A. JAMA Oncol. 2017
Barriers to Lung Cancer Screening
Massachusetts General Hospital Experience

<table>
<thead>
<tr>
<th>Smokers 55-79 y.o.</th>
<th>Community Health Centers</th>
<th>Private Practices</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1480</td>
<td>1776</td>
</tr>
<tr>
<td></td>
<td>13%</td>
<td>4%</td>
</tr>
<tr>
<td>Knowledge and interest in lung cancer screening in community health center patients</td>
<td></td>
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<tr>
<td>---------------------------------------------------------------</td>
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<tr>
<td>Aware of lung cancer screening test</td>
<td>37%</td>
<td></td>
</tr>
<tr>
<td></td>
<td>169 /454</td>
<td></td>
</tr>
<tr>
<td>Would get screened if offered</td>
<td>74%</td>
<td></td>
</tr>
<tr>
<td></td>
<td>336/454</td>
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</table>
MGH Chelsea Patient Navigation for CRC Screening

Any CRC Screening

<table>
<thead>
<tr>
<th>Intervention</th>
<th>Usual Care</th>
</tr>
</thead>
<tbody>
<tr>
<td>30%</td>
<td>10%</td>
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P < 0.001

Colonoscopy

<table>
<thead>
<tr>
<th>Intervention</th>
<th>Usual Care</th>
</tr>
</thead>
<tbody>
<tr>
<td>20%</td>
<td>5%</td>
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</table>

P < 0.001

Percac-Lima JGIM 2009
Objective

- To implement and evaluate a patient navigation program to help high-risk smokers receiving care in community health centers obtain lung cancer screening
Steps to Implement Navigation Program

1. Create smoking and lung cancer screening registry
   – Based on smoking data from the electronic health record
   – Captures in-network screening or diagnostic CTs

2. Develop shared decision making tool for LCS
3. Educate providers about eligibility and ordering LCS
4. Develop patient navigator manual and training
Evaluation

- **Study design**: randomized controlled trial
  - Patient navigation vs. Usual care

- **Study setting**: five MGH community health centers

- **Eligible patients**:
  - Current smokers 55-77 years old
  - Without chest CT in prior 18 months
  - Receiving care in one of the 5 CHC
Navigators’ Interventions

- Lung cancer screening
  - Determine LCS eligibility
  - Educate patients about LCS
  - Reach out to provider to schedule a visit
  - Introduce shared decision making
  - Remind provider to order the test
  - Navigate patient to obtain chest CT

- Smoking cessation
  - Start discussion
  - Refer to Quit Works, MGH Tobacco Coach or/and provider

- Follow up of abnormal screening result
Consort diagram

Current smokers aged 55-77 years without chest CT in past 18 months receiving care in community health centers: 1268

Excluded by PCP: 68

Randomization: 1200

Allocated to intervention (n=400)
- Received intervention (n=135)
- Did not receive intervention (n=265)
  - Unable to contact (n=65)
  - Refused (n=76)
  - Not eligible for lung cancer screening
    - Smoked < 30 pack/year (n=119)
    - Competing comorbidities (n=5)

Allocated to control (n=800)

Program started February 29, 2016
# Patients’ Characteristics

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>Intervention (n=400)</th>
<th>Usual Care (n=800)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age, mean (SD)</td>
<td>61.8 (5.4)</td>
<td>62.4 (5.7)</td>
</tr>
<tr>
<td>Clinic visits over 3 years, mean (SD)</td>
<td>10.3 (7.9)</td>
<td>10.7 (8.4)</td>
</tr>
<tr>
<td>Gender, female (%)</td>
<td>188 (47.0)</td>
<td>442 (55.3)</td>
</tr>
<tr>
<td>Race, white (%)</td>
<td>311 (77.8)</td>
<td>666 (83.3)</td>
</tr>
<tr>
<td>English language (%)</td>
<td>352 (88.0)</td>
<td>714 (89.3)</td>
</tr>
<tr>
<td>Public Insurance (%)</td>
<td>271 (67.8)</td>
<td>520 (65.0)</td>
</tr>
</tbody>
</table>
Proportion of all chest CTs and lung cancer screening CTs in intervention and control

- **Any Chest CT**
  - Intervention: 31.0%
  - Control: 17.3%
  - *p* < 0.001

- **Lung Screening CT**
  - Intervention: 23.5%
  - Control: 8.6%
  - *p* < 0.001

*Percac-Lima Cancer med 2018*
Lung Screening in the Navigated Group

- Of 135 navigated patients who were eligible for and interested in lung cancer screening, 92% (124) had a chest CT during the 11-month study period.
Lung Cancers Diagnosed

• Twelve lung cancers were diagnosed: 8 in the intervention patients (2%) vs. 4 in controls (0.5%)

• Three patients (2 in the intervention group and 1 in the control group) were diagnosed with lung cancer after a screening CT

• Six of nine cancers identified after a diagnostic chest CT were stage 4, and 3 patients died
Lessons Learned – Navigators’ Challenges

- Smoking history data is not completed in EMR
- Calculating accurate pack-year history of smoking was time consuming
- 46% of patients were not eligible because of insufficient pack-year hx
- Getting appointments with providers for eligible patients
- Providers forgetting to place the chest CT order despite being reminded
- Some providers believe that LCS might not be the best course of action
- Presenting complex information so patients understand it
## Lessons learned – Providers’ perspective

<table>
<thead>
<tr>
<th>Intervention</th>
<th>Extremely or Very Useful</th>
<th>Somewhat Useful</th>
<th>Not at all Useful</th>
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<tbody>
<tr>
<td>Determining pt eligibility</td>
<td>18 (51%)</td>
<td>13 (37%)</td>
<td>1 (3%)</td>
</tr>
<tr>
<td>Engaging pt for shared decision making</td>
<td>18 (53%)</td>
<td>13 (38%)</td>
<td>1 (3%)</td>
</tr>
<tr>
<td>Referring pt to smoking cessation</td>
<td>15 (46%)</td>
<td>12 (36%)</td>
<td>2 (6%)</td>
</tr>
<tr>
<td>Reminding you to order LCS CT</td>
<td>23 (66%)</td>
<td>7 (20%)</td>
<td>2 (6%)</td>
</tr>
<tr>
<td>Reminding you to follow-up abnormal results</td>
<td>16 (46%)</td>
<td>7 (20%)</td>
<td>3 (9%)</td>
</tr>
</tbody>
</table>
Lessons Learned – Providers’ Perspective

“Navigators help patient and providers”
“Getting poked is important”
“Great program, I appreciate reminders”
“We struggle with many patients w/multiple barriers to care - Thx for making this possible “
“Organized, efficient navigators made patients’ understanding of the test clearer to the patients and prompted providers to consistently consider screening and cessation education”
Conclusions

• A patient navigation program in community health centers significantly increased lung cancer screening among current smokers

• Navigation may help underserved low-income smokers complete LCS and improve equity in care while decreasing lung cancer mortality
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