IMPROVING EARLY DIAGNOSIS OF LUNG CANCER: THE IMPACT OF REGIONAL AND NATIONAL AWARENESS CAMPAIGNS

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Contents

OUTLINE:

– Background and objective
– Methods
– Key results
– Discussion
  • Conclusions
  • Limitations
  • Further work
BACKGROUND
Background: Lung Cancer in England

- Most common cause of cancer death
- Around 28,000 deaths per year
- Long-term survival is poor
- & little improvement in recent years
Background: Lung Cancer in England

- Survival is worse than in many other countries

Reasons:
- Differences in quality/access to treatment
- Later diagnosis

To improve survival rates in England > more can be done to improve earlier stage at diagnosis
Background: Public Awareness Campaigns

- Small community-based intervention in Doncaster  
  *Athey et al. 2012*

- Department of Health funded local pilot interventions

- **Aim**: raise awareness of persistent cough as a lung cancer symptom & encourage GP visits

- **Regional pilot**: *East & West Midlands*  
  *Oct– Nov 2011*

- **National campaign**: *England*  
  *May–June 2012*

- *Cancer Research UK were commissioned to carry out the campaign evaluations*
OBJECTIVE:
Evaluate the impact of the regional and national lung cancer campaigns
METHODS
Methods

Public awareness → GP presentations → Urgent GP referrals → GP-referred chest x-rays → Diagnosis → Stage → Treatment → Survival
## Methods

### Data collection

<table>
<thead>
<tr>
<th>Metric</th>
<th>Data provider</th>
<th>Type of data</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Public awareness of lung cancer symptoms</td>
<td>TNS BMRB (A market research organisation)</td>
<td>Sample of population</td>
</tr>
<tr>
<td>• Patients GPs recorded as presenting with a cough</td>
<td>Mayden (Healthcare IT specialists)</td>
<td>Sample of GP practices</td>
</tr>
<tr>
<td>• Urgent GP referrals for suspected lung cancer</td>
<td>East Midlands KIT from the Cancer Waiting Times database <em>(NHS England)</em></td>
<td>National dataset</td>
</tr>
<tr>
<td>• Chest x-rays</td>
<td>Diagnostic Imaging Dataset team <em>(NHS England)</em></td>
<td>National dataset</td>
</tr>
<tr>
<td>• Diagnosis, staging &amp; treatment</td>
<td>National Lung Cancer Audit team <em>(Health &amp; Social Care Info Centre)</em></td>
<td>National dataset</td>
</tr>
<tr>
<td>• One-year survival (available for regional pilot only)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Data analysis: differences in metrics between campaign months & a pre-campaign period were analysed

- Compared to controls when possible
Key Results

- ↑ public awareness of lung cancer symptoms

  e.g. Prompted awareness of cough for 3+ weeks

<table>
<thead>
<tr>
<th></th>
<th>Pre-campaign</th>
<th>Post-Campaign</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Pilot area</strong></td>
<td>19%</td>
<td>34%</td>
</tr>
<tr>
<td><strong>Control area</strong></td>
<td>22%</td>
<td>20%</td>
</tr>
<tr>
<td><strong>National campaign</strong></td>
<td>18%</td>
<td>33%</td>
</tr>
</tbody>
</table>

* = significantly different to pre-campaign
Key Results

Percent change between campaign/control months and previous time period:

- ↑ people with a cough going to see their GP
- ↑ urgent GP referrals for suspected lung cancer
- ↑ GP-referred chest x-rays
- ↑ number of lung cancers diagnosed
Key Results

Evidence of a stage shift at diagnosis

- ↑ proportion of non small cell lung cancers diagnosed at stage I (p<0.001)
- ↓ proportion diagnosed at stage IV (p<0.001)
- No change for the control period  (p=0.404 & p=0.244)

Increase in surgical resection rate

- 2.3 percentage point increase in proportion receiving resection (p<0.001)
- No evidence of increase for the control (p=0.425)
Key Results

- One-year age-standardised crude survival

Regional campaign:

- Increase of 4 percentage points in the **pilot** area (p=0.024)
- Increase of 2 percentage points in the **control** area (p=0.034)

But no evidence of a difference in magnitude (p=0.425)
Conclusions

– “Whole system” response: increases for metrics across the pathway

– First data to show a shift in stage at diagnosis following a lung cancer awareness campaign

– Surgical resection = treatment most likely to improve long-term survival

  ➢ Expect an increase in proportion receiving surgery will lead to a reduction in lung cancer mortality rates
Limitations

- No strict control available
- Lead-time bias
  • An increase in survival might be due to patients diagnosed earlier but their overall survival time will be the same
Further work

- Impact on emergency presentations
- Impact on long-term survival and mortality rates
- Cost-effectiveness
- Negative & other positive impacts
- Longevity of impact
- Effect of repeating the campaign
Acknowledgments

We would like to thank the following organisations:

- Cancer Research UK
- Department of Health
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- East Midlands Knowledge & Intelligence Team
- Mayden
- National Lung Cancer Audit team and the Health & Social Care Information Centre
- NHS England
- Public Health England
- TNS BMRB
Since this presentation, these results have been published in the British Journal of Cancer: