Impact of cancer symptom awareness campaigns on diagnostic testing and treatment

Abigail Bentley, Erika Denton, Lucy Ironmonger, Sean Duffy

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Background: Lung Cancer in England

- Most common cause of cancer death (~28,000/year)
- Long-term survival is poor & worse than elsewhere

![Relative survival chart](chart.png)

**5 year age-standardised relative survival**

- Australia
- Canada
- Denmark
- Norway
- Sweden
- England

*Coleman et al. 2011*

Reasons:

- Differences in quality/access to treatment?
- **Later diagnosis?**

*Walters et al. 2013 & Holmberg et al. 2010*
Background: Public Awareness Campaigns

Small community-based intervention in Doncaster

Athey et al. 2012

- DH 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

Note: National campaign repeated July/Aug 2013
Methods

- Data collected on a range of metrics:
  - Public awareness
  - Presentations to primary care
  - 2WW referrals
  - **Diagnostics** (Diagnostic Imaging Dataset)
  - **Diagnoses** (National Lung Cancer Audit / Cancer Waiting Times and Monitoring Dataset)
  - **Stage at diagnosis** (National Lung Cancer Audit)
  - **Surgical resection rate** (National Lung Cancer Audit)
Methods

Data collected pre-campaign

Data collected during campaign (May-July 2012)

SAME PERIOD PREVIOUS YEAR (May-Jul 2011)

Month prior (April 2012)

Diagnostics

Surgical resections

Diagnoses

Stage

CHANGE MEASURED

Significance tested with $\chi^2$

DIFFERENCE MEASURED

Significance tested with poisson regression

Compared to time control
Key results: CXR

- 19% increase in GP-referred CXRs between pre-campaign & campaign (p<0.001)
- -0.8% decrease in all CXRs between pre-campaign & campaign (p<0.001)

Data source: Diagnostic Imaging Dataset
Campaign: first national lung May-June 2012
Key results: CT

- 16% increase in GP-referred CTs between pre-campaign & campaign (p<0.001)
- 4% increase in all CTs between pre-campaign & campaign (p<0.001)

Data source: Diagnostic Imaging Dataset
Campaign: first national lung May-June 2012
Key results

• 9% increase in lung cancers diagnosed during May-July 2012 compared to May-July 2011 (p<0.001)
• 18% increase in diagnoses following a 2WW referral (p<0.001)

Data source: National Lung Cancer Audit/Cancer Waiting Times and Monitoring Dataset
Campaign: first national lung May-June 2012
Key results

- 9% increase in lung cancers diagnosed during May-July 2012 compared to May-July 2011 (p<0.001)
  - 18% increase in diagnoses following a 2WW referral (p<0.001)

- Evidence of a stage shift at diagnosis:

- 3.1 percent point increase in stage 1 diagnoses and corresponding 3.5 percent point decrease in stage 4 diagnoses (p<0.001) during May-July 2012, compared to 2011

* Statistically significant change; p<0.05

Data source: National Lung Cancer Audit
Campaign: first national lung May-June 2012
Key results

- 9% increase in lung cancers diagnosed during May-July 2012 compared to May-July 2011 (p<0.001)
  - 18% increase in diagnoses following a 2WW referral (p<0.001)
  - Evidence of a stage shift at diagnosis:

- 2.3 percentage point increase in proportion of patients receiving surgical resection as a first definitive treatment during May-July 2012, compared to 2011 (p<0.001)

* Statistically significant change; p<0.05

Data source: National Lung Cancer Audit
Campaign: first national lung May-June 2012
Discussion

• Substantial increase in GP-requested chest x-rays

• Decrease in imaging requested via all routes

• First data to show a shift in stage at diagnosis following a campaign

• Surgical resection = Rx most likely to improve long-term survival

• Anticipate that increased receiving surgery will lead to reduction in lung cancer mortality
Limitations

• No strict control available
• Data quality of the DID
• Provisional data for 2013
Further work…

- Impact on CXR reporting times
- Impact on emergency presentations
- Impact on survival and mortality rates
- Cost-effectiveness
- Negative & other positive impacts
- Longevity of impact
- Effect of repeating the campaign
- Preparing a manuscript for peer review
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References


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