Public Health England | Department of Health

Evaluation of the Be Clear on Cancer lung cancer awareness campaign regional pilot, East and West Midlands

10 October to 13 November 2011

About Public Health England

Public Health England (PHE) exists to protect and improve the nation's health and wellbeing, and reduce health inequalities. It does this through world-class science, knowledge and intelligence, advocacy, partnerships and the delivery of specialist public health services. PHE is an operationally autonomous executive agency of the Department of Health.

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Acknowledgements

Note of clarification

In January 2011, *Improving Outcomes: A Strategy for Cancer* set out the Government's ambition to save an additional 5,000 lives by 2014/15. The aim was to achieve this through earlier diagnosis and better access to treatment. The Department of Health (DH) had started the focus on earlier diagnosis following the *Cancer Reform Strategy* in 2007 and the symptom awareness raising activity began in 2010. Since April 2013, the Be Clear on Cancer programme of activity has been delivered by Public Health England (PHE) in partnership with the DH, NHS England and Cancer Research UK.

At the time of this regional lung cancer pilot, DH was leading on the Be Clear on Cancer activity and therefore will be referenced throughout the document.

Contents

1. Executive summary

Background

In January 2011, *Improving Outcomes: A Strategy for Cancer* set out the Government's ambition to save an additional 5,000 lives by 2014/15. This was to be achieved through earlier diagnosis (through increased awareness of symptoms and earlier presentation) and better access to optimal treatments.

A regional lung cancer awareness pilot was funded by the Department of Health (DH) and ran in the Central TV region (predominantly East and West Midlands) from 10 October to 13 November 2011. It consisted of various activities, including TV, radio and press adverts, 10 face-to-face events and out of home advertising eg pharmacy bags and screens in GP surgeries. It was delivered in partnership with the former Cancer Networks, clinical leads in local hospitals, general practice and public health teams.

On the whole, the campaign was targeted at those who were aged over 50 years and from lower socio-economic groups. This target audience was selected due to incidence, mortality, survival and staging data that were available at the time for England. However, for some elements of the campaign, such as the media buying, a slightly older demographic of over 55 years was selected. This is a standard age band for buying media and would hopefully minimise the influence on younger people. In this report, you will see both over 50 and over 55 being referred to.

The primary objectives of the campaign were to:

1. Raise the awareness of the signs and symptoms of lung cancer among the target audience.
2. Increase the presentation of symptoms of lung cancer by the target audience to primary care.

The hope was that by raising awareness and encouraging people with the promoted symptoms to present to their GP promptly, more cancers would be diagnosed at an earlier stage and may therefore lead to better overall outcomes. In addition, DH was mindful that it needed a campaign mechanism that was manageable and would not cause unnecessary pressures on the NHS therefore, the impact on NHS services was also assessed.

Findings

Evaluation found that, following the campaign, the objectives relating to awareness and presentation of symptoms to primary care were met. In addition, there was a positive trend in the number of cancers detected, and some evidence of a shift to earlier stage at diagnosis, associated with the timing of the campaign. This is the first campaign

within the Be Clear on Cancer programme of work to suggest a link between awareness raising and a positive change in key clinical outcomes.

Specifically, following the campaign, there was raised awareness and knowledge among the public of the signs and symptoms of lung cancer, and greater confidence in survey respondents' ability to spot these signs and symptoms.

There was also an increase in presentations to primary care for lung cancer related symptoms, principally a cough. Most of the increase was in the over 50s target group, although there was a small increase in the 30–49 age group. This increase in activity equated to approximately 2.4 additional visits per GP practice per week (based on attendances among those aged 30 and over) during the eight weeks following the campaign launch compared with the same weeks in the previous year.

Urgent GP (two week wait; 2WW) referrals for suspected lung cancer also increased in the months surrounding the campaign (compared with the same time in the previous year) in the pilot area, with the largest increases being within the target age group. This increase continued for at least three months from the start of the campaign. However, there is no evidence of a significant increase in diagnostic tests (chest x-rays or CT scans) carried out. This could be largely due to issues of data collection, as at the time there were no routinely collected data for these diagnostic tests, and so a small number of control trusts were sampled to provide data, which is likely to have been too small to provide statistically meaningful comparisons.

There was a trend towards a greater number of lung cancers diagnosed in the pilot trusts (trusts within the campaign region) compared with control trusts (trusts in England outside the campaign region) during the period associated with the campaign (compared with the same time in the previous year), with a greater proportion being in the target age group. The data suggest some evidence of a shift in stage at diagnosis to an earlier stage and better clinical outcomes.

Results from this regional pilot have featured in the Be Clear on Cancer programme evaluation summaries, the annual updates of Improving Outcomes: A Strategy for Cancer, as well as abstracts, posters and oral presentations at relevant conferences. Details can be found at: www.naedi.org/beclearoncancer.

In addition, this campaign is highlighted along with the subsequent national lung cancer campaign and published in the *British Journal of Cancer* (Ironmonger *et al*, An evaluation of the impact of large-scale interventions to raise public awareness of a lung cancer symptom; *British Journal of Cancer* 2015; 112, 207-216. doi:10.1038/bjc.2014.596).

The Be Clear on Cancer lung campaign evaluation results continue to be reviewed and inform decisions on whether the campaign should be run again across England. Since the first appearance of the lung cancer adverts at a national level (2012), there have been two subsequent periods of lung cancer campaign activity in July–August 2013 and March–April 2014. Results from these campaigns will also be published as and when available. Details can be found at: www.naedi.org/beclearoncancer.

2. Campaign inputs and outputs

This section describes the details, costs and timings of the regional public campaign, and estimates (based on media consumption data) how many people had the opportunity to see, hear or experience it. It also describes the clinical engagement work carried out before and during the campaign, and describes partnerships forged with other organisations.

2.1. Campaign costs

The campaign cost approximately £1.4m. Media advertising accounted for around 42% of the costs. Other costs included creative development and research (including tracking research costs).

2.2. Creative development

In 2010, M&C Saatchi won a competitive tender to produce an overarching proposition for a series of new cancer awareness campaigns which would:

- enable the target audience to become clear about the symptoms
- understand the action that they need to take (ie visiting their GP)
- understand the benefit of doing so (cancer is treatable if caught early)

Their appointment followed qualitative research which assessed a number of creative propositions. Be Clear on Cancer was the chosen route because it was felt to be authoritative, avoided skirting around the issue of cancer and the 'stamp' was seen as direct and conveying seriousness, while also highlighting the positive news that early diagnosis could make cancer more treatable. Also, the brand was seen to stand on its own and was clearly about cancer when seen in isolation.

Following this initial assessment stage, refinements were made to the Be Clear on Cancer creative and the first Be Clear on Cancer regional pilot, which focused on bowel cancer, ran from January 2011 to March 2011. More detail on this pilot, including a full report can be found on the Gov.UK website.

Figure 1 – Bowel cancer campaign poster
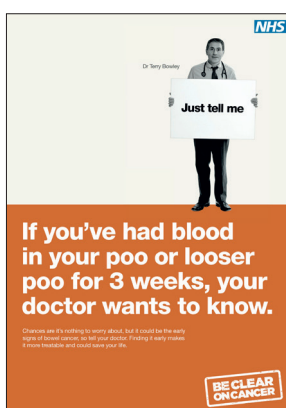
In 2010/11, DH had also funded a series of 53 local-level projects, on breast, bowel and lung cancers (a report on this activity can be found on the Gov.UK website). This presented an opportunity to pilot Be Clear on Cancer for some other cancer types at a local level. Therefore, at the same time as developing the bowel cancer campaign, M&C Saatchi were instructed to create two further versions for breast and lung cancer. Experts from different clinical settings as well as public health, and the voluntary sector, helped to develop the key messages.

At the end of 2010 and early 2011, 39 of the local DH-funded pilots targeted lung cancer and 18 of these used Be Clear on Cancer branded materials.

Figure 2 – Local pilot press advert, 2011
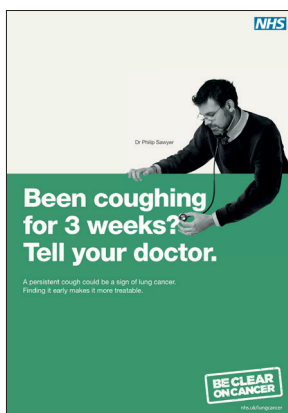
Initial feedback from the local projects suggested that the Be Clear on Cancer approach for lung cancer was working, but minor refinements may be appropriate before a wider roll-out. When moving to a regional pilot, TV advertising would also be introduced and it was important to understand what would motivate the audience to act and how to make the most of the 30-second TV advert. Therefore, more qualitative research was commissioned to ensure the messaging was as clear as possible for the lung cancer creative.

In August 2011 qualitative research was conducted in Birmingham, Liverpool and Manchester by Research Works, an independent market research organisation. They conducted:

- 12 extended mini-focus group sessions (2 hours)

  - 4 with the core target audience
  - 2 with influencers
  - 6 with ethnic minority communities

- 48 hall test depth interviews (20 minutes duration)

  - 32 with the core target audience
  - 16 with influencers/friends/family
  - including ethnic minority communities

- 10 depth interviews with GPs (1 hour)

Following this work, the creative strategic approach for lung cancer was confirmed; see figure 3.

Figure 3 – Strategic approach for the creative
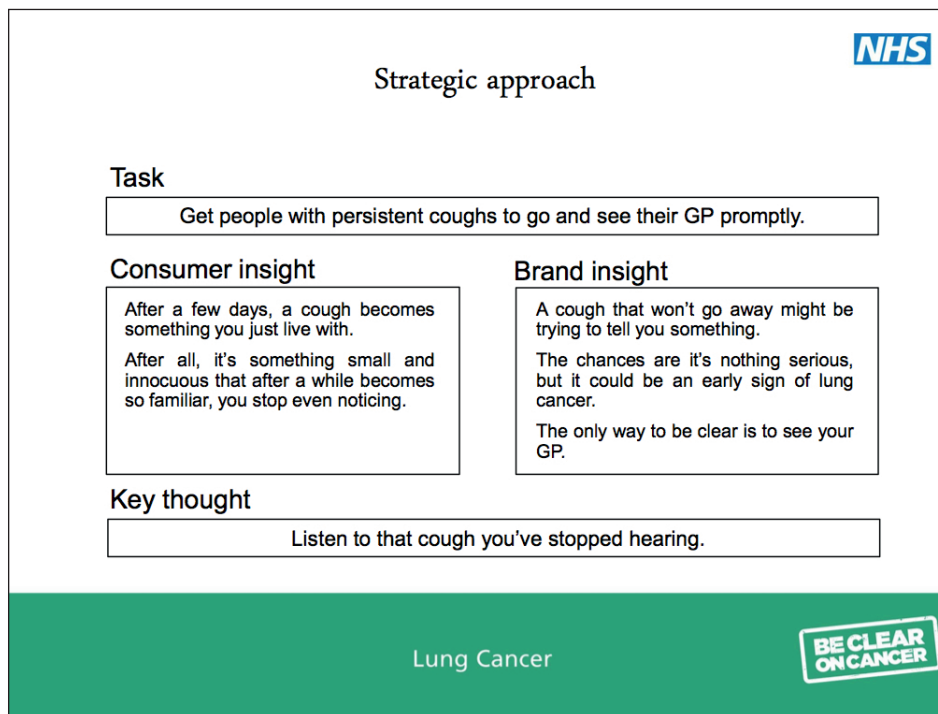
Minor revisions were made to the existing creative work, including a change from 'just tell me' to 'tell your doctor'. This was to make the call to action even clearer. In addition, new posters and press adverts were created, some carrying the same message but profiling more GPs. But also, a new approach was tested which targeted 'influencers' – the friends and family of those who may have stopped noticing their cough.

Figure 4 – 2011 regional pilot – new posters

2.3. Communication channels

Channels were first analysed based on their suitability for the task and were then chosen for their ability to target the right audience in the pilot region. Outdoor and online were least likely to be key channels; but TV, press, radio and events were more suitable.

The chosen region, which followed the Central TV broadcast footprint, covered a number of former Cancer Networks and Strategic Health Authorities (SHAs). This complexity meant that in one SHA, some locations would get TV coverage while others wouldn't. It was important to keep this in mind for all planning in terms of both the supporting media, and during the vital engagement process with clinical colleagues.

Figure 5 – Central BARB (Broadcasters' Audience Research Board) region overlaid with Midlands SHA regions
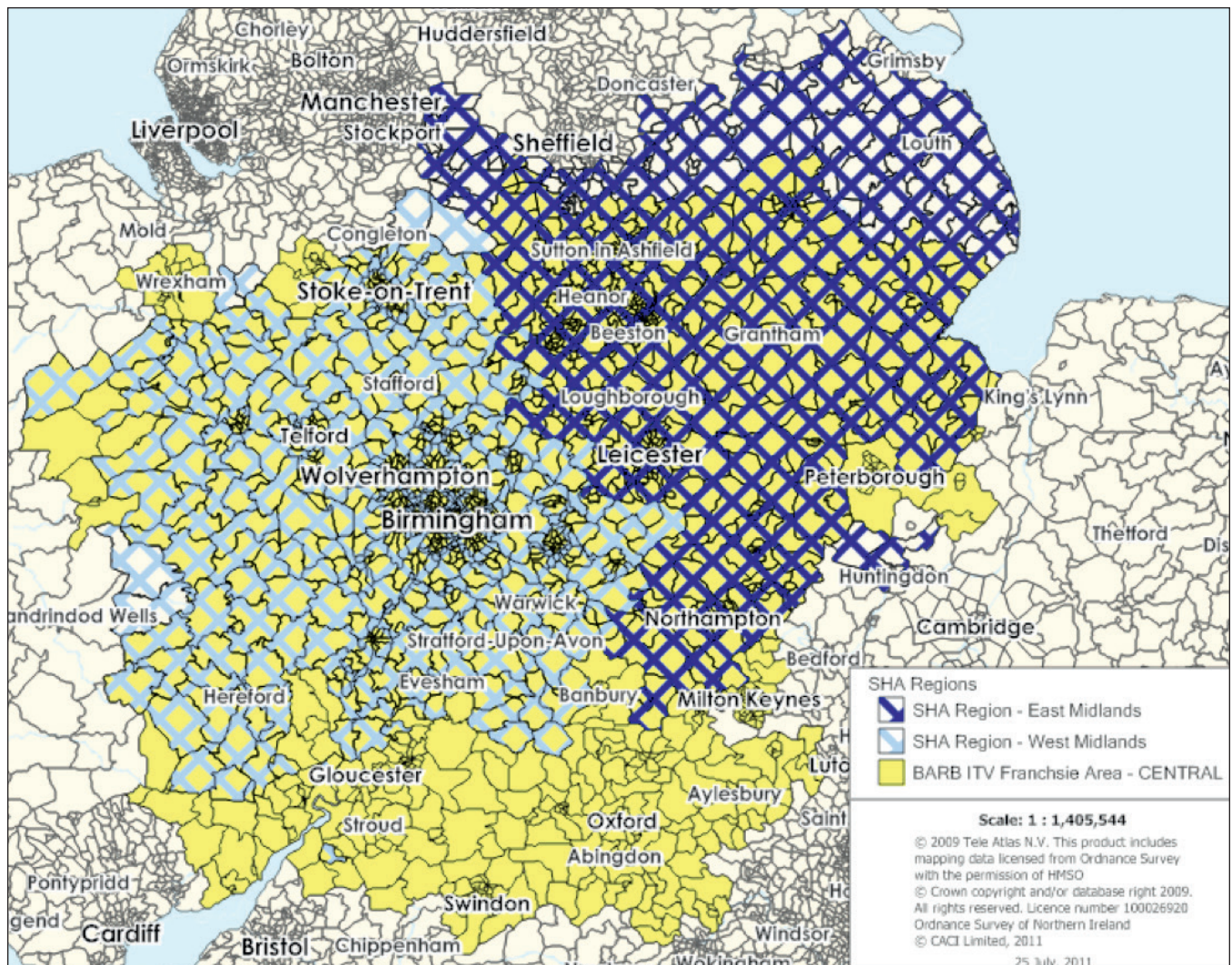
Source: BARB map provided by MEC media agency

There are a number of restrictions inherent in a regional pilot campaign including:

PR

While the campaign launched successfully, DH could not carry out as much PR as they might otherwise have done given the need to limit the amount of national coverage in order not to affect results in the control region. This meant DH could not for example, target consumer magazines.

Partnership

Geographical restrictions meant DH were very restricted in their choice of partners and could only use those who could deliver regionally. Some partners were interested but could not restrict communications to the pilot regions.

Social media

Although not a key channel for the target audience, DH was not able to exploit this to target 'influencers' as much as they would have liked, because some social media communications cannot be contained regionally.

TV, press and radio

Choice of media channels was restricted based on geographical boundaries. For example, DH could only use ITV and Channel 4 as satellite channels cannot be purchased on a regional basis.

Taking these restrictions into account, a campaign plan was then developed that would deliver a five-week pilot in the Central TV region during October and November 2011. The dates for each communication channel varied a little according to availability of media.

An additional consideration for DH when planning the media was the balance of the desired intensity, with not overwhelming the public and NHS services, ie not overdoing the advertising and stimulating complaints, or having too few that nobody noticed.

2.4. Campaign outputs (reach and frequency)

Figure 6 shows the planned and achieved activity that was obtained for each of the key communication channels.

Figure 6 – Planned and achieved delivery in the Central region		
Channel	**Planned lung cancer delivery**	**Achieved lung cancer delivery**
TV	737 TVRs 81% reach at at 9.1 OTS	856 TVRs 94.5% reach at 9.1 OTS
Radio	50% reach at 24.7 OTH	47% reach at 32.7 OTH
Regional press	51% reach at 4.3 OTS	51% reach at 4.3 OTS
Face-to-face events (10 events)	N/A	5,961 members of the public engaged and provided with campaign leaflets/ symptom cards
Online search	16,667 clicks	15,153 clicks (= 91% of target)

TVRs = Television ratings (this is a measure of the popularity of the advert [www.barb.co.uk]).
OTS = Opportunities To See
OTH = Opportunities To Hear

2.5. TV

For the lung cancer campaign, two 30-second adverts targeting a 50+ C2DE audience (where C2DE refers to skilled manual workers; semi and unskilled manual workers; and casual or lowest grade workers and those that rely on welfare, including students [National Readership Survey, 2014]), one aimed at men and the other one at women, were created.

The concepts were tested with the target audience pre-production to ensure the locations shown in the advert and the faces of the actors featured felt real and something the target audience could associate with. For example, the male advert features a tradesman who is seen packing away his tools from the back of the van and visiting a handyman store, while the female character works in a shop environment and interacts with her family during the advert.

Figure 7 – Images from the TV advert for lung cancer

Figure 8 – Script for the lung cancer TV advert

Voice-over:

You may've stopped noticing your cough,

but if you've had it for three weeks or more it could be a sign of lung cancer.

It's probably nothing serious, but finding it early makes it more treatable,

so tell your Doctor.

Be clear on cancer.

Both the male and female TV adverts can be viewed on the campaign website: www.nhs.uk/lungcancer.

The first TV adverts appeared on ITV and Channel 4 on 10 October 2011, with the last ones airing on 13 November 2011. Some of the spot times (ie the time it is due to appear in the programming schedule) are included in figure 9. These spot times are chosen to fit with the TV viewing habits of men and women aged over 55 and C2DE.

Figure 9 – Examples of the 'spot times' from the first week of the campaign

Station name	Date	Day	Time	Programme name
CENTRAL3	10-Oct-11	MON	13:15	Loose Women
CENTRAL3	10-Oct-11	MON	15:00	Dickinson
CENTRAL3	10-Oct-11	MON	19:45	Coronation Street
CENTRAL3	10-Oct-11	MON	21:45	Doc Martin
CENTRAL3	11-Oct-11	TUE	21:45	71 Degrees
CENTRAL3	12-Oct-11	WED	14:30	Dickinson
CENTRAL3	12-Oct-11	WED	18:45	News
CENTRAL3	13-Oct-11	THU	19:15	Emmerdale
CENTRAL3	13-Oct-11	THU	23:20	Jonathan Ross
CENTRAL3	15-Oct-11	SAT	11:45	News
CENTRAL3	15-Oct-11	SAT	12:40	Coronation Street
CENTRAL3	15-Oct-11	SAT	13:40	Coronation Street
C4MIDS	10-Oct-11	MON	08:40	Frasier
C4MIDS	13-Oct-11	THU	15:55	Countdown 2011 Dr Phil Hammond
C4MIDS	13-Oct-11	THU	20:10	Country House Rescue
C4MIDS	13-Oct-11	THU	22:50	Ramsay's Kitchen Nightmares USA

The plan was to reach 81% of the target audience in the Central TV region, providing them with approximately nine opportunities to see the advert. However, it is estimated that the TV advertising reached 94.5% of the target audience, providing them with approximately nine opportunities to see the advert.

2.6. Radio

As with all elements of the creative work, DH was keen to learn from the local lung cancer pilot projects which took place in early 2011 using the Be Clear on Cancer brand. It was important to adapt and add in new items where it was felt they would add most impact. Therefore, at a regional pilot level, two new radio adverts were introduced. These took a slightly different approach to the first radio advert which had been developed. The first advert targeted the person with the symptom – so the person coughing. But, because coughing is an audible sign, and one that people can start to ignore, the new adverts emphasised what friends and family could do if they spotted the symptom, and how they could 'nudge' people into going to tell their doctor.

Figure 10 – Script of the original lung cancer radio advert, which was used during the 2011 local test projects

Italic denotes a sound effect of someone coughing rather than the voice-over saying 'cough'.

Voice-over:

If you've had a *(cough – short)* **for over three weeks you should go and see your doctor.**

A *(coughing – longer bout of coughing)* **can be a sign of lung cancer.**

Of course, the vast majority of *(coughs – 2 x short coughs)* **won't be serious, but if something is wrong, then finding it early means it's more likely to be treatable.**

So, if you've had any sort of persistent *(cough)* **for three weeks, tell your doctor.**

Be clear on cancer.

Figure 11 – Script of the two new radio adverts which were introduced in October 2011 at the regional pilot stage

Female version: The tone of the voice-over is that of a loving wife. She's upbeat and poking fun at her husband until she mentions the cough, when she becomes more questioning/concerned.

Female voice-over:

Isn't it funny how when you're close to someone, you notice habits they seem unaware of...

Like the way he sticks his tongue out when he concentrates.

Or the way he whistles whenever he looks in the oven.

Or how he wriggles his toes in his slippers.

Or how he leans when he goes round corners in the car.

Or that cough he's had...

A second voice-over:

A cough that has gone on for three weeks or more could be a sign of lung cancer. Chances are it's nothing serious, but finding it early makes it more treatable, so don't ignore it, get him to tell his doctor.

Be clear on cancer.

Male version: The tone of the voice-over is that of a doting husband. He's upbeat and poking fun at his wife until he mentions the cough, when he becomes more questioning/concerned.

Male voice-over:

Isn't it funny how when you're close to someone, you notice habits they seem unaware of...

Like the way she always leaves the last little bit of tea. Or how she checks the car doors after she's locked them.

Or how she tucks her hair behind her ear (even though it's already behind her ear).

Or that cough she's had...

Second voice-over:

A cough that has gone on for three weeks or more could be a sign of lung cancer. Chances are it's nothing serious, but finding it early makes it more treatable, so don't ignore it, get her to tell her doctor.

Be clear on cancer.

The radio adverts were 30 seconds in length and ran for the campaign duration of five weeks, with adverts starting on 10 October 2011 and finishing on 13 November 2011.

Figure 12 – Radio stations in the campaign region which featured the Be Clear on Cancer adverts
Beacon Radio, Wolverhampton Shrewsbury & Telford
Mercia, Coventry
Gold Wolverhampton
Gold Birmingham
Gold Coventry
Wyvern FM, Worcester
96.4 BRMB, Birmingham
Heart West Midlands
Mix 96, Aylesbury
107.7 The Wolf, Wolverhampton
Heart East Midlands
Touch Radio, Staffordshire
Peak 107 FM, Chesterfield
Glide FM 1079 (was Oxford's FM 107.9)
Smooth Radio (West Midlands), Birmingham
Radio Mansfield 103.2
Rugby FM
Smooth Radio (East Midlands), Nottingham
107.6 Banbury Sound
102FM Touch radio – Warwickshire, Worcestershire, Cotswolds, Stratford
Capital East Midlands (was Leicester Sound RAM FM & Trent FM), East Midlands
Gold East Midlands
Oak FM, Hinkley & Loughborough

Based on the broadcast area for the radio stations detailed, it is estimated that almost 47% of the over 55, C2DE population will have heard one or more of the Be Clear on Cancer lung adverts. On average, they will have had 32 opportunities to hear the advert.

2.7. Regional press

An example of the press advert which was placed in regional press can be seen in figure 13. During the five weeks of activity, different iterations of the press advert were featured. All were run full page and in colour.

Figure 13 – Example press advert for the regional pilot

Most papers featured the advert five times during the campaign activity (ie one a week), with just two papers having a lower frequency. The first adverts appeared during the week commencing 10 October 2011 and finished during the week commencing 7 November 2011.

In total it is estimated that the press adverts will have reached 51% of the over 55, C2DE audience, within the distribution areas of the papers. And, on average, a person in the target audience will have had four opportunities to see the advert.

Figure 14 – Regional press titles in the Central TV region which featured Be Clear on Cancer adverts

West Midlands Express & Star	Oxford Mail
Shropshire Star	The Citizen Gloucester
Leicester Mercury	Gloucestershire Echo
Nottingham Post	Loughborough Echo
Stoke the Sentinel	Kidderminster Shuttle Series
Birmingham Mail	Evesham & Cotswold Journal
Sunday Mercury – Birmingham	Grantham Journal
Derby Telegraph	Malvern Gazette & Ledbury Reporter
Solihull News	Staffordshire Newsletter
Birmingham Mail Extra	Great Barr Observer
Cannock & Lichfield Chronicle	Leamington Spa Courier Group
Sutton Coldfield Observer	Stamford Mercury
Coventry Telegraph	Banbury Guardian
Hereford Times	Worcester News
Tamworth Herald Series	Leek Post & Times
Redditch & Alcester Standard	Hinckley Times
Redditch Advertiser Alcester Chronicle	Stratford upon Avon Herald
Nuneaton Weekly Tribune	Burton Mail

2.8. Radio and press for ethnic minority groups

During the five weeks of the pilot campaign, three press adverts appeared in targeted media for ethnic minority communities – Asia Today (two adverts) and Asian Leader (one advert). In addition, Sabras radio in Leicester and New Style radio in Birmingham also carried the radio adverts throughout the campaign period.

2.9. Out of home activity

Out of home activity enables the Be Clear on Cancer brand to be profiled in key community – based locations. For the lung campaign, 350,000 branded pharmacy bags were distributed to pharmacies in the Midlands area and promotion was featured on the Life Channel in just over 300 healthcare settings, such as GP waiting rooms. This activity started during the week commencing 10 October 2011 and finished at the end of October, although some pharmacy settings may have continued to dispatch medicines in the branded Be Clear on Cancer bags after this time.

2.10. Face-to-face events

From the outset, DH knew that face-to-face (F2F) activity was an important part of this campaign. This was based on learning from the local pilot projects earlier in 2010/11 and also the experience of the regional bowel cancer pilots which took place in the South West and East of England. The F2F activities acted as an extension of the campaign by:

• encouraging the target audience to visit the stand and find out more about the signs and symptoms of lung cancer

• providing more information on the key symptom – a persistent cough

• introducing other symptoms such as coughing up blood

• distributing a printed leaflet

• where appropriate, encouraging those with symptoms to go to their GP promptly

DH commissioned the British Lung Foundation (BLF) to deliver 10 key events in a number of carefully selected locations across the pilot area. Locations were selected based not only on high footfall, but also where the primary target audience was more likely to visit. Experian's Mosaic UK profiling was used to identify key areas and then understanding the lifestyle of the target audience enabled the team to focus in on the best locations.

Figure 15 – Face-to-face events for the lung cancer regional pilot

Date	Town	Venue
18 October	Wolverhampton	Mander Centre
19 October	Dudley	Churchill Shopping Centre
21 October	Sandwell	Asda
26 October	Walsall	Old Square Shopping Centre
27 October	Birmingham	Chelmsley Wood Shopping Centre
31 October	Leicester	Asda in Braunstone
2 November	Nottingham	NHS Building – Clifton Corner Store
4 November	Derby	Sainsburys 2–6 Copecastle Square
8 November	Stoke on Trent	Tesco Extra
10 November	Coventry	Lower Precinct Shopping Centre

The materials distributed at all events included the branded Be Clear on Cancer symptoms card, campaign leaflet and referral card, co-branded with the BLF logo.

Two members of BLF staff and a nurse were present at each event. Along with volunteers, the BLF staff engaged with members of the public and gave out leaflets and symptoms cards. Members of the public also had the opportunity to talk to a nurse about lung cancer symptoms.

Staff working at events emphasised the importance of people visiting their GP if they have symptoms of lung cancer, without scaremongering. A balance between these two elements was crucial so that participants were not alarmed, but were motivated enough to take action.

Although not overtly promoted in any of the activities, information and contact details for local smoking cessation services were offered to participants who smoked.

Results were as follows:

- 5,961 people received leaflets and symptom cards
- a total of 333 members of the public talked to a nurse during events

2.11. Leaflets and posters

Building on the work that had been tested at a local level, new posters were introduced to profile more GPs and to reach the influencers. The campaign leaflet provided the public with more information on lung cancer, such as other symptoms, and also helped to build the belief that early diagnosis is important. Two case studies highlighted that people do survive lung cancer.

Figure 16 – The campaign leaflet

Leaflets were distributed via the F2F events, as mentioned in the previous section. They were also distributed through the waiting room information service (WIS), which places materials in GP surgeries that sign up to use the service. 31,400 leaflets were distributed through WIS (40 leaflets to each of 785 surgeries).

A letter was sent to 4,000 organisations, such as health venues and local community organisations, via the Publicity Register Mailing. This provided them with a sample of the posters and leaflets and invited them to order more.

The orderline for Be Clear on Cancer materials had requests for approximately 18,000 leaflets and 700 posters.

Although these quantities are less than those ordered and distributed for the previous bowel cancer pilot, it should be remembered that this activity only ran in one region (not two) and that it was a shorter campaign (ie five weeks rather than seven).

2.12. Visits to nhs.uk/lungcancer (NHS Choices)

The main call to action for the campaign was for people to contact their GP if they thought they had symptoms, but some campaign elements included a specific URL, nhs.uk/lungcancer, which led people to specific campaign information pages on NHS Choices.

Figure 17 – NHS Choices campaign

Please note, this figure shows the lung cancer pages on the NHS Choices website as of March 2015.

Figure 18 – The number of visits to the dedicated lung cancer site
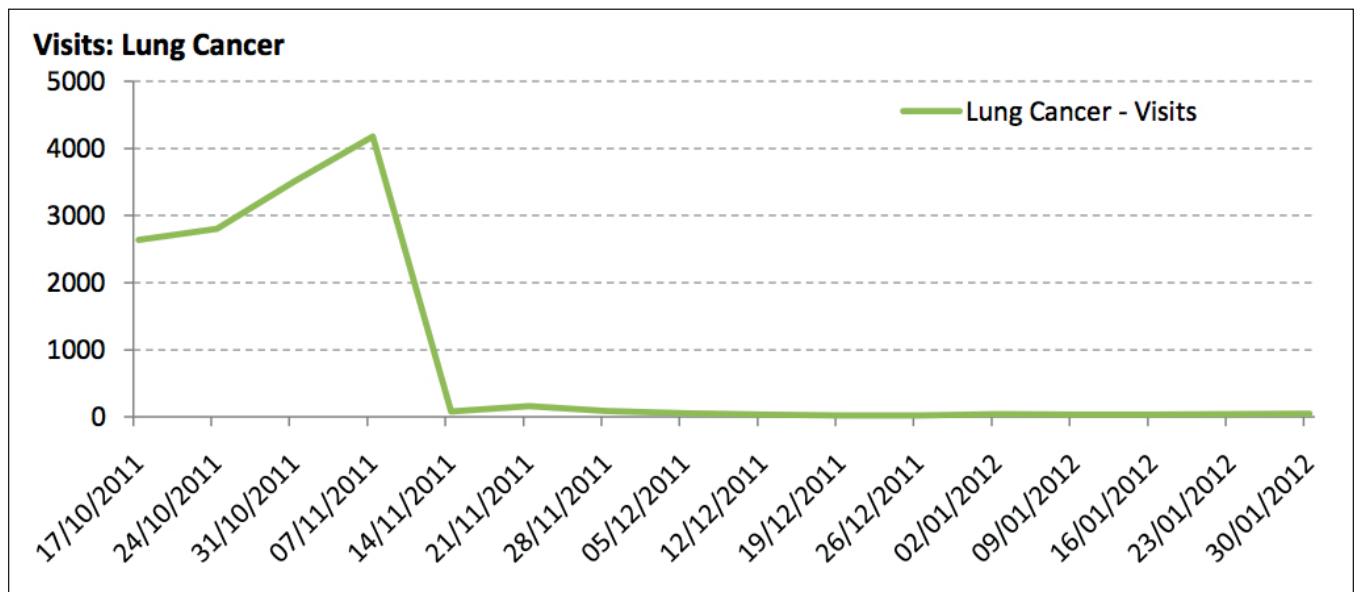
Looking in more detail at the vists to the pages, the average time spent on the main lung cancer page was just over 95 seconds.

The website also enabled visitors to watch the TV and radio adverts, and to find out details of their local GP.

Although online was not a key channel for the target audience, DH ran paid-for search activity primarily as a means for the secondary 'influencer' audience (friends and family) to find out more about lung cancer. The aim was to obtain 16,477 clicks from the lung cancer adverts placed. The actual amount was 15,154 clicks; 92% of the target. The paid-for searches generated 9,785 landings to the lung cancer homepage.

Figure 19 – Example of a placed advert

Lung Cancer Symptoms

www.NHS.uk/ClearOnCancer/Lung
Know The Signs. It Could Save Your Life.
Visit Your Doctor Today.

The advert in Figure 19 proved to be the most popular, with a 17.74% click-through rate.

2.13. Clinical engagement

As with the bowel cancer regional pilot, clinical engagement was primarily delivered through the former Cancer Networks, who were each allocated funding from DH for this purpose. The aim was to prepare clinicians (primary and secondary care) for the potential increase in presentation with relevant symptoms.

Information on the campaign timing, communication activities, aims, messages and target groups was shared with the Networks on a regular basis via email and conference calls. Then the Networks, through their local communication channels, tailored and cascaded the information out to other essential groups such as GP leads, and the Site Specific Groups (SSGs) so that they too could cascade out to their colleagues.

A series of briefing sheets for GPs, practice teams and pharmacists were developed and again made available for cascade. These short electronic briefings enabled colleagues to understand why the campaign was needed and the evidence base to support it – providing signposts to further information. Learning from the previous pilots was also introduced on the briefing sheets to help colleagues understand about the potential impact and advertising 'weight' of the campaign so they could plan for changes in service demand.

The time to conduct this clinical engagement was relatively short for the lung cancer regional pilot and this, combined with the shorter duration of the actual campaign activity will have impacted on the depth and breadth of engagement that was possible.

Figure 20 – Briefing sheets for GPs and practice teams

2.14. Partnerships

One of the challenges of running a regional pilot is that many partners operate nationally and cannot limit their supporting activity to just one region. In addition, for the lung cancer pilot, the reduced lead time impacted on this element of the plans. Therefore, commercial partnership activity was primarily focused on pharmacies; encouraging them to order materials. Some major employers in the area were also approached and details of how to order materials was highlighted to them. In addition, Asda ran employee well-being days that carried lung cancer early signs and symptoms messaging at 10 of their Midlands stores.

2.15. PR

DH announced the launch of the campaign with a press notice. An independent media evaluation report showed that all of the coverage was considered favourable, with 87% of the coverage rated as 'strongly favourable'. Coverage of the launch and the campaign activities led to:

- 83 main articles: 58 news, 18 features and 7 interviews
- the majority of the 83 articles highlighting the key messages
  - 80% included "3 week cough/visit your GP"
  - 77% included "find early/more treatable"
- PR coverage reaching 24% of Midlands residents 1.6 times (NB regional media only)

The media evaluation indicates that these are very good results, especially the strongly favourable coverage and the high coverage of key messages. In particular, the use of local spokespeople and local case studies worked well.

3. Evaluation approach

The key aims of the Be Clear on Cancer lung cancer campaign were to:

• raise the awareness of the signs and symptoms of lung cancer among the target audience (primarily those aged 50 and over and of a lower socio-economic group)

• encourage the target audience to see their doctor when they experience symptoms, increasing presentations with relevant signs and symptoms

DH, working with the National Cancer Action Team (NCAT), Cancer Research UK (CRUK) and others, came together to evaluate the impact of the regional lung cancer awareness pilot.

Building on the approach taken in the evaluation of the regional bowel cancer awareness pilot, the evaluation team sought to collect data against a number of metrics reflecting different points along the patient pathway, from campaign and symptom awareness, through to diagnosis and treatment (see figure 21). This was in addition to the collection of evidence regarding the campaign inputs (what went into the campaign in terms of time, effort and cost), and the campaign outputs (what came out of the campaign in terms of materials, delivery and reach), which have been described above.

Figure 21 – Evaluation metrics

Data	Source
Public awareness and GP survey	Tracking survey undertaken by TNS BMRB (market research company).
Presentations to primary care	GP Read codes extracted and analysed by Mayden (healthcare IT specialists).
Urgent GP (2WW) referrals for suspected lung cancer	Data from the National Cancer Waiting Times Monitoring Dataset (provided by NHS England). Data extracted and analysed by the National Cancer Intelligence Network (NCIN).
Diagnostic tests: chest x-rays and CT scans	Local trust Radiology Information Systems (provided by individual trusts). Data analysed by CRUK.
Cases diagnosed	National Lung Cancer Audit database (provided by the Health and Social Care Information Centre [HSCIC]). Data analysed by CRUK.
Treatment	
Performance status	
Staging	
One-year survival	

This report brings together the contributions towards data collection, analysis, interpretation and reporting from a number of different teams across a range of organisations.

While reflecting different points along a pathway where one might expect the impact of the awareness campaign to be felt, it should be noted that the data are not longitudinal and do not follow individuals through the system.

The findings of this evaluation were used to inform decisions about the future roll-out of the Be Clear on Cancer lung awareness campaign, which ran on a national basis in May and June 2012.

Some of the results from this regional pilot, along with those from the subsequent national campaign, have been published in the *British Journal of Cancer* (Ironmonger *et al*. An evaluation of the impact of large-scale interventions to raise public awareness of a lung cancer symptom have been published in: *British Journal of Cancer* 2015; 112: 207–216. doi:10.1038/bjc.2014.596.

4. Public awareness and GP survey

In order to assess whether the campaign was reaching the target audience and having any impact on cancer awareness, DH commissioned TNS BMRB (an independent market research organisation) to undertake quantitative pre- and post-campaign surveys among the general public. This was complemented by surveys with GPs.

4.1. Methods

i) Public awareness tracking survey

A pre- and post-campaign survey was carried out among those aged 55 years or older in the pilot region (Central England, which is predominantly East and West Midlands), using the rest of England as a control. Although the target age group of the whole campaign was 50+, data for the surveys were only collected for the population aged 55+ to match the media buying. Questions were added to the in-home, face-to-face omnibus survey which is carried out across England, with ad-hoc face-to-face fieldwork boosts in the Central England pilot area. The survey took approximately 15–20 minutes.

Pre-campaign interviews took place between 12 September and 9 October 2011, and post-campaign interviews between 14 November and 11 December 2011. Just over 500 interviews were carried out pre/post in the pilot region (571/536) and around 450 interviews pre/post were available for the control (452/451). The surveys were informed by the Cancer Awareness Measure (Stubbings et al, 2009[1]) and the lung-specific version (Simon et al, 2012[2]). Further details surrounding the sampling methods can be found in the Supplementary Materials and Methods of the paper by Ironmonger et al (2015).

Demographics

Of the pre- and post-campaign survey respondents, 54% were female, 42% were aged 55–64 years, and approximately 60% were from lower socio-economic groups (C2DE) in both the pilot and control areas.

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[1] Stubbings et al (2009). Development of a measurement tool to assess public awareness of cancer. *British Journal of Cancer* 2009;. 101: S13–17, doi:10.1038/sj.bjc.6605385

[2] Simon et al (2012). Knowledge of lung cancer symptoms and risk factors in the UK: development of a measure and results from a population-based survey. *Thorax* 2012; 67, 426–32, doi:10.1136/thoraxjnl-2011-200898

Figure 22 – Survey respondent demographics pre- and post-campaign for pilot and control areas

Base: All respondents (General Public) (Control Pre/Post: 452/451) (Pilot Pre/Post: 577/536)
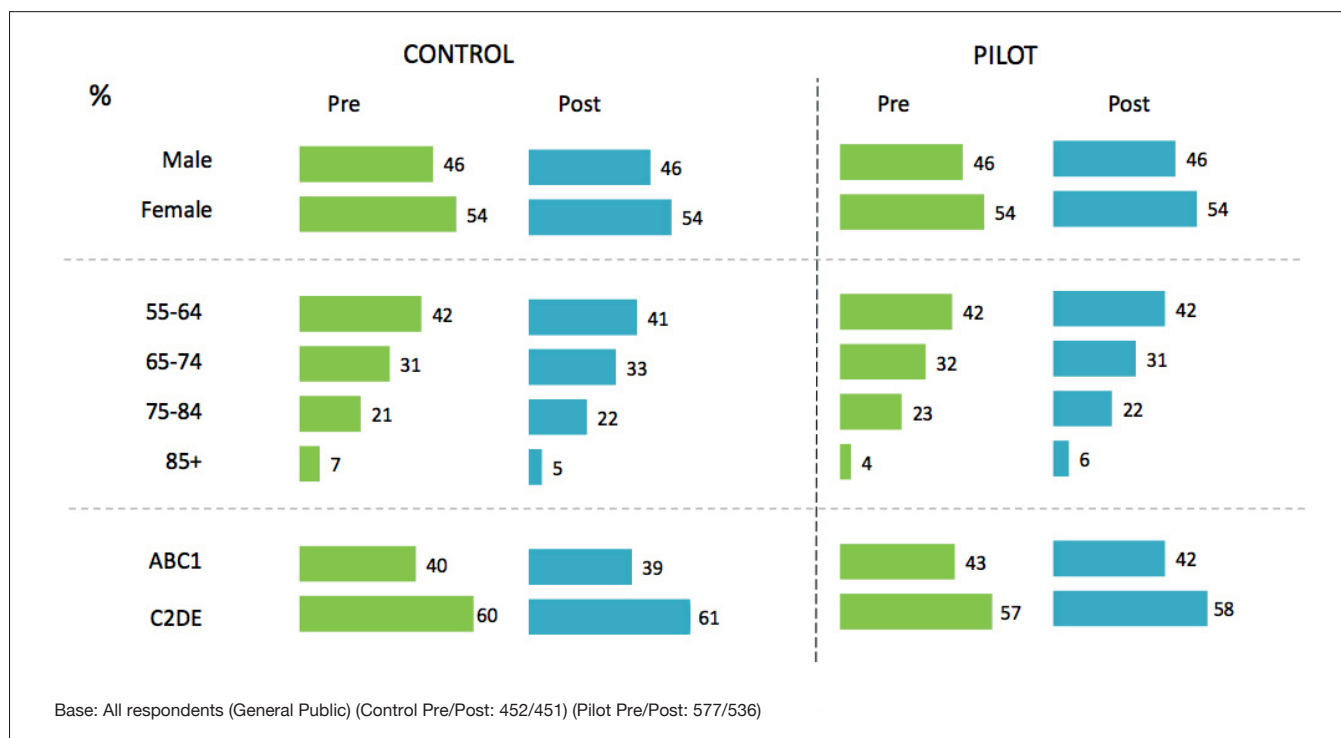
In addition, approximately one in six were smokers and one third had previously either had lung cancer or knew someone that had.

Data were weighted by age, sex and region to be representative of the population so that there were no significant differences in the age and sex profiles between before and after the campaign, or the pilot and control areas.

ii) GP survey

A telephone survey was carried out with GPs pre- and post-campaign in the pilot region and across the rest of England to act as a control. GPs were selected from the Dendrite health professional database and stratified by area and size of practice. Interviews were completed with only one GP per practice and GPs who had taken part in previous research (eg the bowel cancer pilot) were not contacted. Data were weighted to be representative of the total numbers of GPs in England by (former) Government Office Region (GOR) and size of practice, as defined on the Dendrite database. All interviews were conducted using Computer Assisted Telephone Interviewing (CATI). The pre-campaign questionnaire was five minutes long and the post-campaign seven minutes long, where more data about patient numbers and the impact of the campaign was collected. Pre-campaign interviews took place between 19 September and 7 October 2011, and post-campaign from 21 November to 9 December 2011. Around 100 interviews were completed pre- and post-campaign in the pilot region (93/102) and just over 100 pre- and post-campaign across the rest of England (107/98).

Demographics

In the GP sample, most had been practising for 20 years or more, were male and worked full-time (figure 23).

Figure 23 – GP demographics pre- and post-campaign for pilot and control areas

Base: All respondents (General Public) (Control: 116) (Pilot: 228)
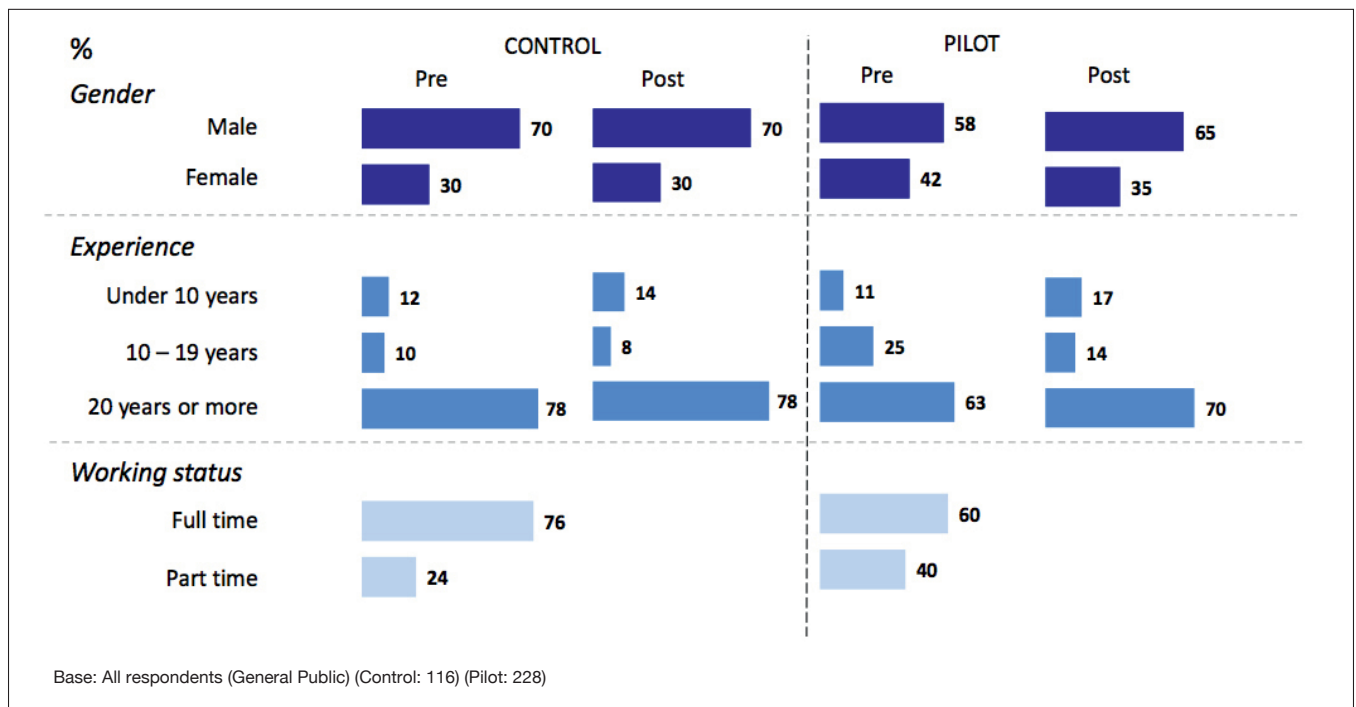
4.2. Results

i) Public awareness survey results

Campaign awareness and recognition

Spontaneous awareness

To gain an understanding of the broad awareness of cancer advertising and publicity, respondents were asked whether they had seen, heard or read any adverts or publicity about the subject of cancer in the last couple of months.

From the pre-survey, three quarters (75%) of the public surveyed in the pilot areas were aware of general cancer publicity before the campaign started; more than in the control area (63%), indicating an existing heightened awareness of this type of advertising in the pilot area. This highlights the 'background noise' that the campaign had to cut through.

From the post-campaign survey, no significant change in awareness of general cancer advertising or publicity was found in either the pilot region (78%) or across the control area (64%).

Those respondents who said they were aware of any publicity relating to cancer were asked to recall what type of cancer was featured in the advertising or publicity they were referring to. Mentions of lung cancer more than doubled from 16% in the pre-survey to 46% in the post-survey in the pilot region, and similarly in the control area from 9% to 22%, (see figure 24).

Respondents were also asked where they had seen the advertising or publicity about cancer. In both the control and pilot areas, TV advertising was the most frequently mentioned source of general cancer advertising pre-campaign. However, in the pilot region only, mentions of TV advertising significantly increased from 37% pre- to 65% post-campaign, while mentions of other sources decreased, except national newspaper advertising which remained stable.

Figure 24 – Type of cancer advertising or publicity seen or heard

Base: All who had seen cancer advertising (General Public) (Control Pre/Post: 285/288) (Pilot Pre/Post: 427/411)
Q7. Which type of cancer was the focus of what you saw or heard? (unprompted)
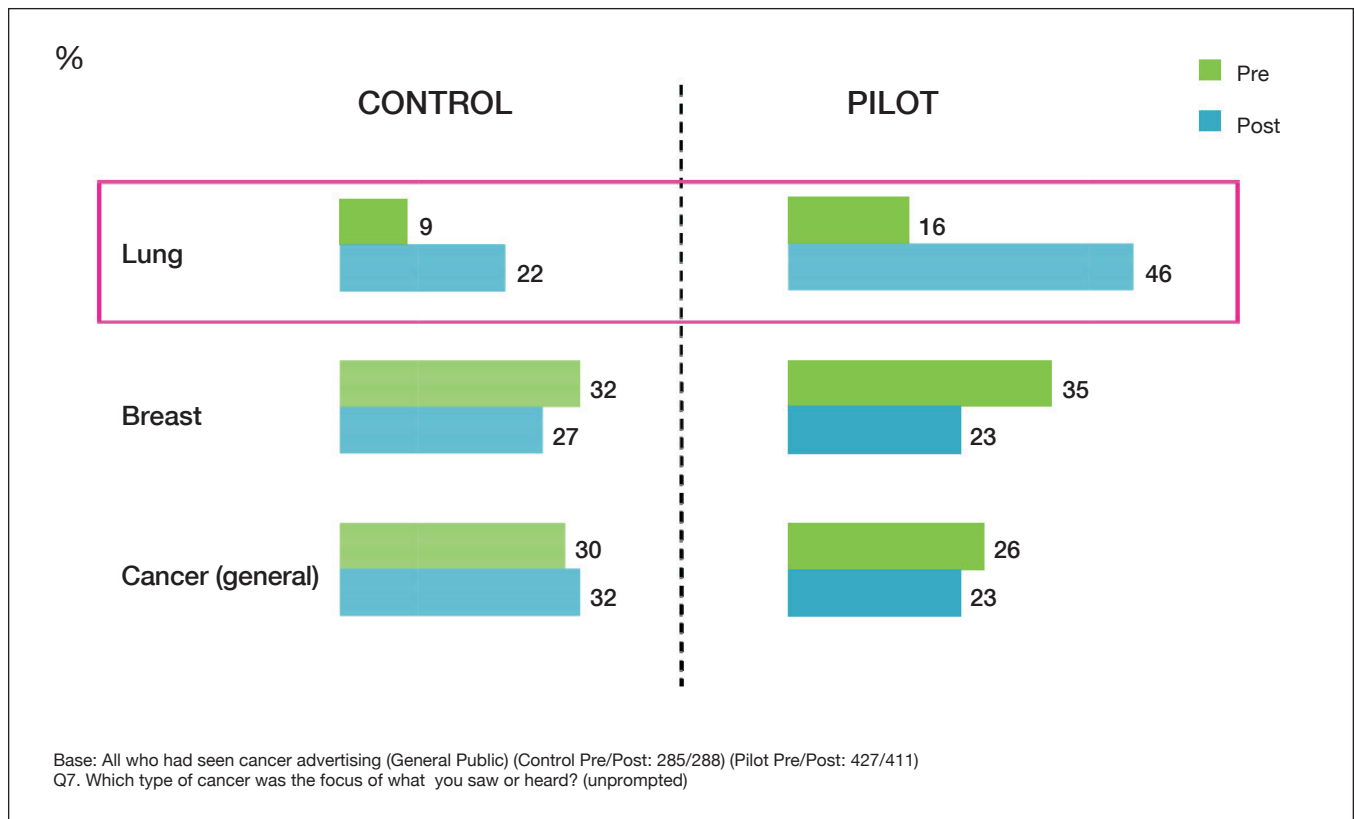
Prompted recognition of campaign

Post-campaign, respondents were shown various campaign executions and asked if they recognised them. Each respondent was shown one of the two 30-second TV adverts, the print advert, leaflet and one of three variations of the 30-second radio adverts. Significantly more respondents in the pilot area recognised at least one of the adverts shown to them (70%) than in the control area (28%), clearly indicating a stronger campaign cut through in the pilot areas. This was driven by recognition of the TV advert, with 61% of respondents in the pilot area, compared with 22% in the control area, recognising it. Less than a quarter of respondents in the pilot area recognised each of the other campaign elements (23% radio, 19% print, 14% leaflet).

In the pilot area, a greater proportion of the lower socio-economic grades, the key target group, recognised the TV advert compared with higher grades; 59% of C2DEs recognised it compared with 48% of ABC1s (where ABC1 refers to higher, intermediate, supervisory, clerical and junior managerial, administrative and professional workers [National Readership Survey, 2014]). Women were also more likely to have reported recognising the TV advert than men (59% versus 49%).

Recognition of the Be Clear on Cancer logo (both the orange bowel cancer version and green lung cancer logos were shown) was significantly higher in the pilot area post-campaign (25%) compared with pre-campaign (14%), with no change observed in the control area (15% pre to 16% post).

Campaign communication

After being shown all of the lung cancer adverts on the screen during the interview, respondents were asked a series of communication statements about the adverts. Approximately nine in 10 respondents in both regions agreed that 'it is important that adverts like this are shown' (89% in the control, 94% in the pilot). Respondents in the pilot area were significantly more likely to agree that the advertising was clear and easy to understand compared with the control area (94% compared with 88%). This was particularly the case for women in the pilot area (96% compared with 92% men).

Around half thought the advertising was relevant to them (49% in the control, 53% in the pilot) and respondents from lower socio-economic groups (C2DEs) were more likely to think it was relevant (in the pilot area, 56% compared with 47% of ABC1s).

Knowledge of signs and symptoms

Spontaneous awareness

Respondents were asked, before they were shown the campaign materials, to spontaneously name as many signs and symptoms of lung cancer as they could. Following the campaign, respondents in the pilot area were more likely to mention a cough as a sign or symptom of lung cancer compared with those in the control area (66% compared with 49%). Reference to a persistent or prolonged cough within the pilot area significantly increased from 13% of respondents mentioning it before the campaign, to 18% mentioning it after the campaign.

Figure 25 – Spontaneous knowledge of the signs and symptoms of lung cancer – pilot area

NET: COUGH – MENTIONS RELATED TO CAMPAIGN — Pre 62, Post 66
Cough/hoarseness — Pre 50, Post 48
Shortness of breath — Pre 26, Post 22
Coughing up blood — Pre 18, Post 15
Weight loss — Pre 15, Post 11
Persistent/prolonged cough — Pre 13, Post 18
Breathing problems — Pre 8, Post 9
Pain — Pre 8, Post 7
Chest pain — Pre 13, Post 9
Tiredness/fatigue — Pre 6, Post 5
Coughing up phlegm/discoloured sputum — Pre 5, Post 5
Smoking — Pre 1, Post 2
Other answers — Pre 8, Post 6
None — Pre 3, Post 3
Don't know — Pre 19, Post 15

%

■ Pre ■ Post

Key campaign symptom

Base: All respondents (General Public) (Pilot Pre/Post: 571/536)
Q16. There are many signs and symptons of lung cancer. Please write in as many as you are aware of.
Showing responses given by 4% or more in either region.

All respondents who could spontaneously describe a sign or symptom of lung cancer were then asked how confident they were in the responses they had given. In the pre-campaign survey, confidence levels in both the control and pilot regions were similar, with just over half of respondents expressing confidence (either fairly confident or very confident) in their knowledge (53% pilot and 54% control). After the campaign, levels of confidence significantly increased in both the control (54% to 62%) and the pilot regions (53% to 63%).

Prompted awareness

To explore awareness further, respondents were shown a list of possible lung cancer signs and symptoms and asked to what extent they thought each was a warning sign. There was a significant increase in the proportion of respondents from the pilot area saying the following were 'definitely' warning signs (pre-campaign versus post-campaign):

- coughing up blood (54%–63%)
- a cough for three weeks or more that doesn't go away (19%–34%)
- losing weight for no obvious reason (26%–33%)
- a cough that has got worse or changed (22%–31%)
- breathlessness (20%–30%)
- Persistent pain in your chest or shoulders (12%–17%)

There were no statistically significant changes in the proportion of respondents from the control area saying that any of the above warning signs were 'definitely' warning signs for lung cancer.

Figure 26 – Prompted knowledge of the signs and symptoms of lung cancer – pilot area

% definitely a warning sign

Symptom	Pre	Post
Coughing up blood	54	63
Losing weight for no obvious reason	26	33
A cough which has got worse or changes	22	31
Breathlessness	20	30
A cough for three weeks or more that doesn't go away	19	34
Repeated chest infections	15	19
Feeling more tired than usual	13	16
Persistent pain in your chest or shoulders	12	17

Pre Post

Key campaign symptom

Base: All respondents (General Public) (Pilot Pre/Post: 571/536)
Q18. I'm going to list some symptoms that may or may not be warning signs for lung cancer.
For each one can you tell me the extent to which you think it is a warning sign for lung cancer. (SC)

Attitudes and beliefs

Respondents were presented with a number of agree/disagree statements concerning attitudes towards lung cancer, visiting the GP and early presentation. Results from these statements revealed positive beliefs about the benefits of early presentation across both the pilot and control areas, and little changes pre- to post-campaign, so the following results relate specifically to respondents in the pilot area post-campaign. The majority (94%) of respondents agreed (selected strongly agree or agree) that 'If lung cancer is diagnosed early, it is more likely to be treatable' and 93% agreed that 'Going to my GP early with a symptom of lung cancer provides reassurance that the issue is now being addressed'.

Nevertheless, a sizeable proportion of respondents agreed they would be worried about what the doctor might find (41%) and believed that cancer treatment is worse than death (32%), with little difference between areas or pre- to post-campaign. Few agreed (7%) that they would feel embarrassed going to the GP with a persistent cough and 7% agreed that their GP would be difficult to talk to about signs and symptoms of lung cancer.

Figure 27 – Attitudes towards lung cancer and early presentation – pilot area (post-campaign survey)

Base: All respondents (General Public) (Pilot Post: 538)/ All who are registered with a GP (General Public) (Pilot Post: 528)
Q12a. I'm going to read you some statements that are sometimes made about lung cancer, can you tell me how much you agree or disagree with each statement? Q19e. How much would you agree or disagree that the following reasons may put you off going to see the GP/doctor even if you had a symptom that you thought might be a sign of lung cancer? (SC)

Cue to action

When asked whether they had talked about the subject of lung cancer recently, approximately one in 10 respondents said they had. This was regardless of area and whether pre- or post-campaign.

When asked how soon they would go to their GP if they had a persistent cough, the majority claimed they would go within three weeks, in both the pilot and campaign areas. There was a significant increase in the proportion in the pilot area saying they would go after three weeks pre- to post-campaign (9% to 13%).

Respondents who recognised any of the lung cancer advertising were asked if they had taken any action as a result. Most respondents said that they had not taken any action. Significantly fewer respondents in the pilot area said they had taken some action, compared with respondents in the control area (15% compared with 26%). The most frequent response was to make an appointment to see a doctor, followed by talking to friends or family members, or a nurse.

Figure 28 – Claimed intention to act as a result of the campaign

%

NET: TAKEN ACTION — 26 (Control), 15 (Pilot)

Made an appointment to see my GP or doctor — 9 (Control), 4 (Pilot)

Talked to friends or family members to advise them about information in these ads — 8 (Control), 3 (Pilot)

Talked to friends or family members about symptoms of my own — 4 (Control), 3 (Pilot)

Talked to a practice nurse — 3 (Control), 2 (Pilot)

Thought about making an appointment to talk to my GP or doctor — 4 (Control), 1 (Pilot)

■ Control
■ Pilot

Base: All respondents who recognised an ad from the campaign (General Public) (Control: 125) (Pilot: 371)
Q12j. As a result of seeing or hearing any of the ads I have just shown you, did you do any of the following?

ii) GP survey results

GP awareness of the campaign

Spontaneous awareness

After the campaign, 62% of the 102 GPs in the pilot area claimed to have seen or heard of lung cancer advertising or publicity; this had increased from 38% pre-campaign. Awareness was higher in the pilot area with 62% of GPs recalling something compared with 36% of GPs in the control area. When asked where they had seen or heard something, GPs in the pilot area, unlike in the control region, were significantly more likely in the post-campaign survey to say a public-facing source, both, above the line, sources (such as media coverage, TV and radio advertising; 14% increase to 35%) and, below the line sources (such as factsheets; 2% increasing to 23%).

Nearly half of GPs (46%) post-campaign in the pilot area remembered receiving a factsheet or an email about the lung cancer campaign. Of the specific types of communications, recall of an email from the Royal College of General Practitioners was highest, with 26% of GPs saying they remembered receiving this. Just over one in 10 recalled an email from DH (13%) or CRUK (14%).

Figure 29 – Sources of awareness (GP survey)

Base: All respondents (General Public) (Control Pre/Post: 107/98) (Pilot Pre/Post: 93/102)
Q5. (GP) Have you received any of the following in the last month? (Prompted)
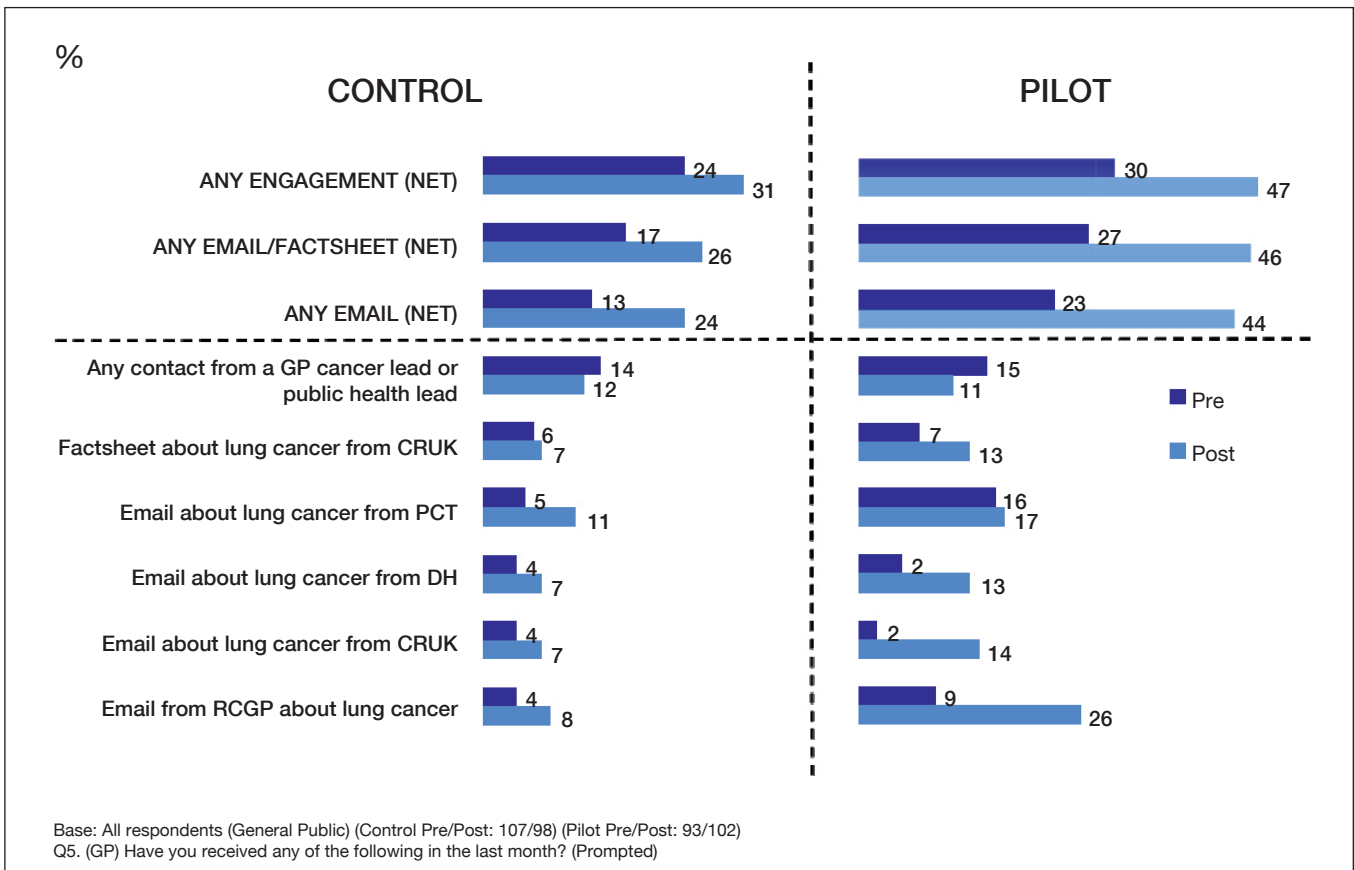
Prompted recognition of the campaign

GPs were given a description of the campaign and asked whether they remembered the Be Clear on Cancer campaign. GPs in the pilot area were significantly more likely to recognise the line 'Be Clear on Cancer' than those in the control area (45% compared with 20%). And of those in the pilot area who recognised the campaign, a high proportion (66%) correctly thought DH was responsible for the campaign.

GP impressions of campaign communication

The majority of GPs agreed that advertising such as this would encourage patients to seek help earlier (94%); that it was important that advertising like this is shown (87%); that it would help raise awareness of the signs and symptoms of cancer (87%); and that it would make patients more confident about talking to their GP about their symptoms (79%).

GPs were asked whether the amount of discussion around lung cancer had changed in their local medical community over the past couple of months. GPs in the pilot area were more likely to say there had been 'much more' discussion after the campaign (14%) compared with before the campaign (9%). There was also a significant increase in the proportion of GPs saying that patients had spontaneously mentioned lung cancer advertising or publicity after the campaign (48%), compared with before (4%), with nearly a quarter (23%) saying it had been mentioned three or more times.

GP perceptions of impact on presentations to primary care and referral of patients

There was a significant increase in the number of GPs in the pilot area stating they thought three to five patients had come to see them with a persistent cough that the patient thought could be lung cancer between the pre- and post-campaign surveys (from 10% to 21%).

Figure 30 – GP perceptions on number of patients visited presenting with persistent coughs (GP survey)

Base: All respondents (General Public) (Control Pre/Post: 107/98) (Pilot Pre/Post: 93/102)
Q10. (GP) How many patients came to you with a persistent cough they thought might be lung cancer in the last month (regardless of whether or or not you referred them for futher tests)?
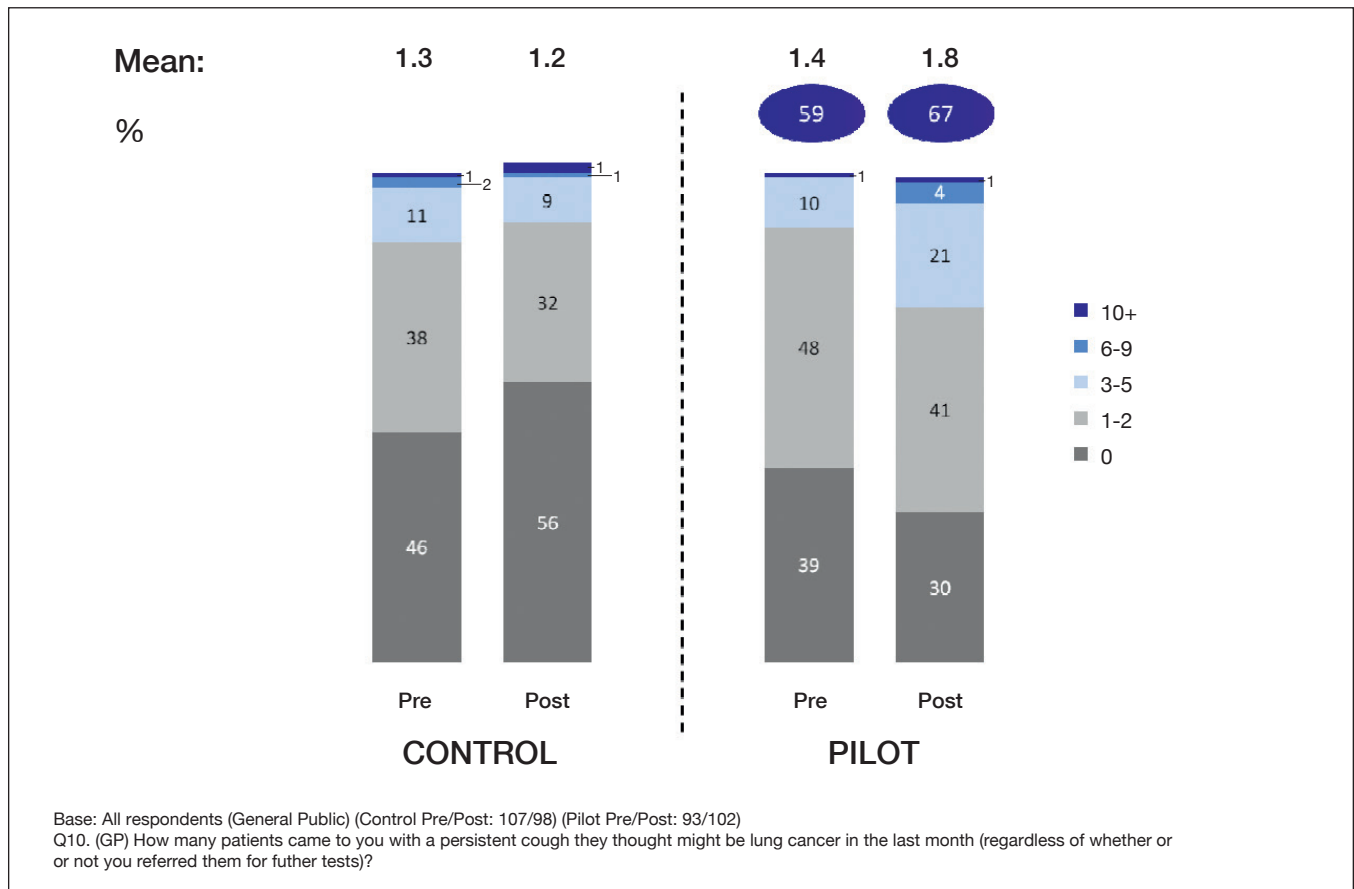
GPs who reported having a patient(s) present with a persistent cough they thought might be lung cancer in the previous month (from the time of the survey) were asked whether this was more or less than what they would normally expect or the same as usual. Half (50%) of these GPs in the pilot area during the post-campaign survey said they thought they had seen more patients with a persistent cough that they thought might have been lung cancer than they would normally expect (compared with 12% in the control area). However, the other half (50%) of GPs in the pilot area thought they had seen around the same number of patients (0% thought there were less than they would normally expect, or that they could not say).

4.3. Conclusions

Public awareness survey

Levels of spontaneous awareness and prompted recognition of the campaign indicate it had cut through in the pilot area. Recall of lung cancer advertising and recognition of the Be Clear on Cancer campaign logo significantly increased in the pilot area.

Awareness was clearly driven by the TV adverts, showing it worked well as the campaign lead; 61% in the pilot area recognised the TV advert, with 70% recognising at least one campaign source. In the control area 28% reported recognising at least one of the campaign sources and this may be a result of local activity or overspill from the TV region.

There was clear appreciation for this type of campaign with the majority of respondents believing it was important. The aim for a simple message also appears to have been achieved, with the majority of respondents agreeing that it was clear and easy to understand.

Only half of the respondents thought the campaign was relevant to them, which could be because they were not currently experiencing symptoms or did not see themselves as being 'at risk'. Perceived relevance was higher among those from lower socio-economic groups, the target audience for the campaign.

Prompted awareness of the key campaign symptom of a cough for three weeks or more saw the biggest increase in awareness from pre- to post-campaign (from 19% to 34%), a change that was not observed in the control area.

The campaign did not seem to have an impact on people's beliefs or attitudes towards lung cancer and early presentation. This is not entirely unexpected given the short duration of the campaign and because beliefs about the benefits of early presentation were largely positive at the outset.

While there was a small increase in the number of people in the pilot area saying they would visit the doctor after three weeks (in line with the key campaign message), on the whole, the campaign had relatively little impact on people's reported behaviour – the majority had not taken any action as a result of seeing the campaign. This is not unexpected given the proportion of people likely to have had a persistent cough in the pilot area at the time of the activity.

GP survey

The campaign appears to have had some cut through with GPs. More GPs in the pilot area remembered lung cancer adverts and there was higher recognition of the campaign 'Be Clear on Cancer' than among those in the control area.

Encouragingly, nearly half (46%) of GPs in the pilot area remembered receiving a factsheet or an email about the campaign, with email channels proving to be most memorable, particularly those from the Royal College of General Practitioners.

The majority of GPs agreed that it was important that advertising like this is shown, and that it would encourage the public to visit their GP earlier if they had any signs or symptoms they were concerned about.

GPs in the pilot area reported an increase in discussions about lung cancer in the medical community and an increase in the number of patients spontaneously mentioning lung cancer adverts or publicity after the campaign. They also reported seeing more patients present with a persistent cough.

5. Presentations to primary care

In order to assess whether the campaign was having any impact on GP presentations, a feasibility study was undertaken to determine whether the number of patients visiting their GP with the symptoms highlighted by the campaign increased after the awareness campaign went live in October 2011. This section is based on the report of the evaluation undertaken by healthcare IT specialists Mayden.

5.1. Methods

The methodology used was based on the approach developed to assess the impact of the regional bowel cancer awareness campaign pilot in January to March 2011[3] Data were extracted from 35 practices across six (formerly existing) Cancer Networks across the East and West Midlands, all of which used the EMIS (Egton Medical Information Systems) LV system.

Figure 31 – Cancer Networks (former) and practices whose data were included in the analysis

Network	Practices
Arden Cancer Network	2
East Midlands Cancer Network	17
Greater Midlands Cancer Network	8
North Trent Cancer Network	1
Pan Birmingham Cancer Network	4
The Three Counties Cancer Network	3
Total	**35**

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[3] Department of Health (2012). Evaluation of the bowel cancer awareness pilot in south west and east of England: 30 January to 18 March 2011. www.gov.uk/government/news/evaluation-of-the-bowel- cancer-awareness-pilot

When a patient visits their GP, the GP can record the symptoms reported by the patient for that visit using a 'Read Code'. The analysis looked at the number of patients visiting their GP with one or more lung cancer related symptom, including the symptoms mentioned specifically in the campaign. Activity data were reviewed from 1 July 2010 to 31 December 2011, to allow for comparison of activity following the campaign launch in 2011 with activity in the same time period in 2010. Symptoms were matched to the relevant Read Codes, and fell into four groups:

- Symptoms directly linked to the TV campaign (cough, suspected lung cancer)
- Symptoms referenced in other campaign material (haemoptysis/coughing up blood, dyspnoea/shortness of breath, chest pain, fatigue, weight loss, chest infection)
- Symptoms associated with lung cancer (wheezing, loss of appetite, anaemia, anorexia, pneumonia and influenza)
- Control group symptoms (migraine, headache, depression, depressed)

Clinical input was sought for the selection of symptoms and their corresponding Read codes.

Adjusting visits each month for the number of working days available provides a more accurate comparison of activity. However, for the period considered there was no difference in terms of available days, and so no adjustment was necessary.

The data collected from practices included patients of all ages, although the campaign targeted those over 50 years of age. Initial analysis showed an increase in attendances for those aged 30 years and over. It was decided therefore to base further analyses on attendances of all those over 30.

5.2. Results

Did attendances increase? What was the timing of any increased activity?

There was an increase in attendances for symptoms directly linked to the TV campaign, when comparing 2011 with 2010, which started one week after the launch of the campaign and continued for the duration of the campaign, and for a further three weeks after its conclusion. Over the eight weeks following the launch of the campaign there was an increase in attendances for directly linked symptoms by those aged 30 years and over of 23.0% when comparing the same period in 2011 with 2010. Further analyses were therefore based on this eight-week period.

Figure 32 – Week-by-week profile of directly linked symptoms, 2010 versus 2011 (patients aged 30+)
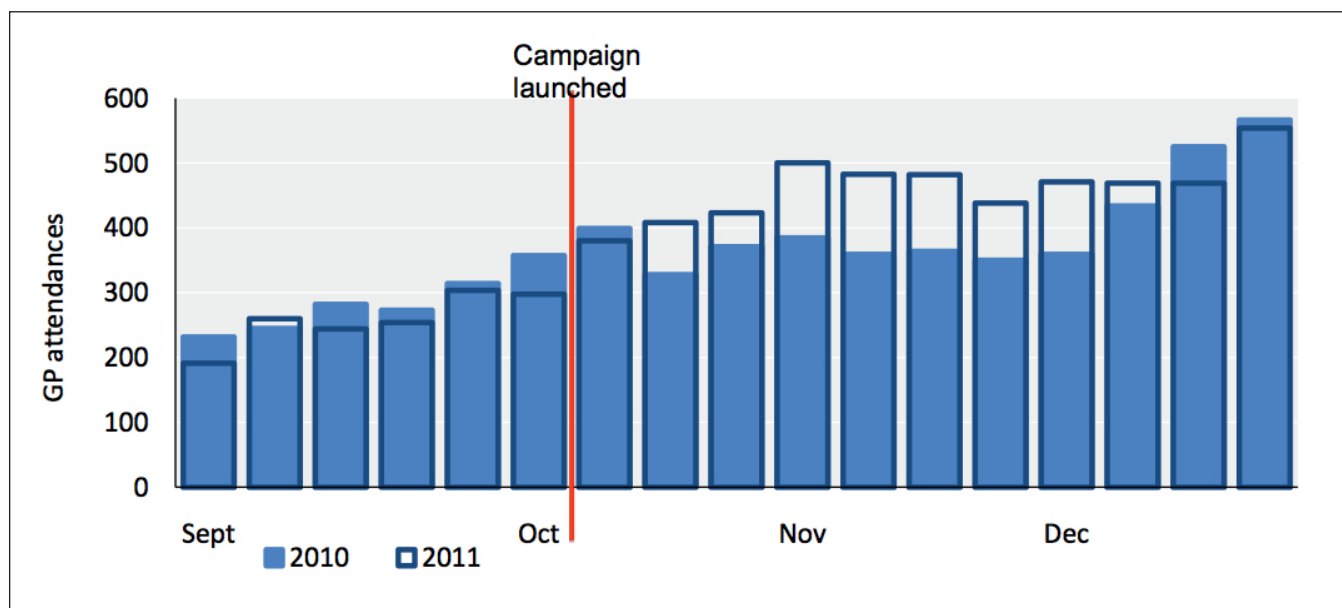
Was the activity related to relevant symptoms?

Analysis was undertaken by the four groups of symptoms: directly linked to TV campaign; referenced in other campaign material; associated with lung cancer; and the control group.

This showed that attendances for symptoms directly linked to the TV campaign increased by 23.0%, and by 4.2% for symptoms associated with lung cancer but not referenced in campaign materials; however, attendances decreased for both symptoms referenced in other campaign material (-3.3%) and for the control symptoms (-2.3%). Attendances for symptoms directly related to the campaign were almost all for cough, with only 21 visits in the eight-week period being coded as 'suspected lung cancer'.

Figure 33 – Visits by symptom group (for the eight weeks after the campaign launch)

Symptom group	GP visits		Difference	
	2010	2011	Visits	% diff.
Directly linked to TV campaign	2,915	3,585	670	23.0%
Referenced in other campaign material	7,269	7,030	-239	-3.3%
Associated symptoms	1,210	1,261	51	4.2%
Control group	2,479	2,422	-57	-2.3%

For the symptoms referenced in the other campaign materials, although there was an overall decrease in attendance during the eight-week period, there was an increase in attendances for fatigue (13.9%) and weight loss (18.5%).

Symptom	GP visits		Difference	
	2010	2011	Visits	% diff.
Dyspnoea/ shortness of breath	1,015	1,005	-10	-1.0%
Chest pain	1,414	1,369	-45	-3.2%
Fatigue	577	657	80	13.9%
Weight loss	157	186	29	18.5%
Acute bronchitis and bronchiolitis	308	297	-11	-3.6%
Lower respiratory tract infection	2,503	2,308	-195	-7.8%
Upper respiratory tract infection	1,249	1,167	-82	-6.6%
Total	**7,223**	**6,989**	**-234**	**-3.2%**

Figure 34 – Visits by symptom referenced in other campaign material (for the eight weeks after the campaign launch)

However, the timing of the increased activity for fatigue and weight loss suggests that they may not be directly or solely related to the campaign. For fatigue, while there was an increase of 13.9% for the eight weeks following the launch, this increase continued well beyond the end of the campaign with an increase of 54.3% seen in December 2011 compared with 2010. For weight loss there was an increase in activity in the six weeks preceding the campaign (18.1% higher than in the same weeks of the previous year), which was a similar increase to that seen when comparing the eight weeks following the launch with the same eight weeks in 2010 (18.5%).

For the other symptoms associated with lung cancer, anaemia showed the greatest increase (8.4%). However, most of this increase related to a single week (week five), which suggests that it may not be directly or solely related to the campaign.

Figure 35 – Visits by associated symptom (for the eight weeks after the campaign launch)

Symptom	GP visits		Difference	
	2010	2011	Visits	% diff.
Wheezing	262	254	-8	-3.1%
Loss of appetite	42	40	-2	-4.8%
Anaemia	677	734	57	8.4%
Pneumonia and influenza	229	231	2	0.9%
Total	**1,210**	**1,259**	**49**	**4.0%**

Did the age distribution of patients presenting with directly linked symptoms change?

The campaign was targeted at those aged 50 years of age and over. Overall there was an increase in attendances with directly linked symptoms of 21.7% among those aged 50 and over, but a decrease (20.5%) for those aged 85 and over. The greatest increase was in those aged 50–69 (32.2%).

Figure 36 – Percentage change in actual activity between 2010 and 2011 by age (for the eight weeks after the campaign launch)
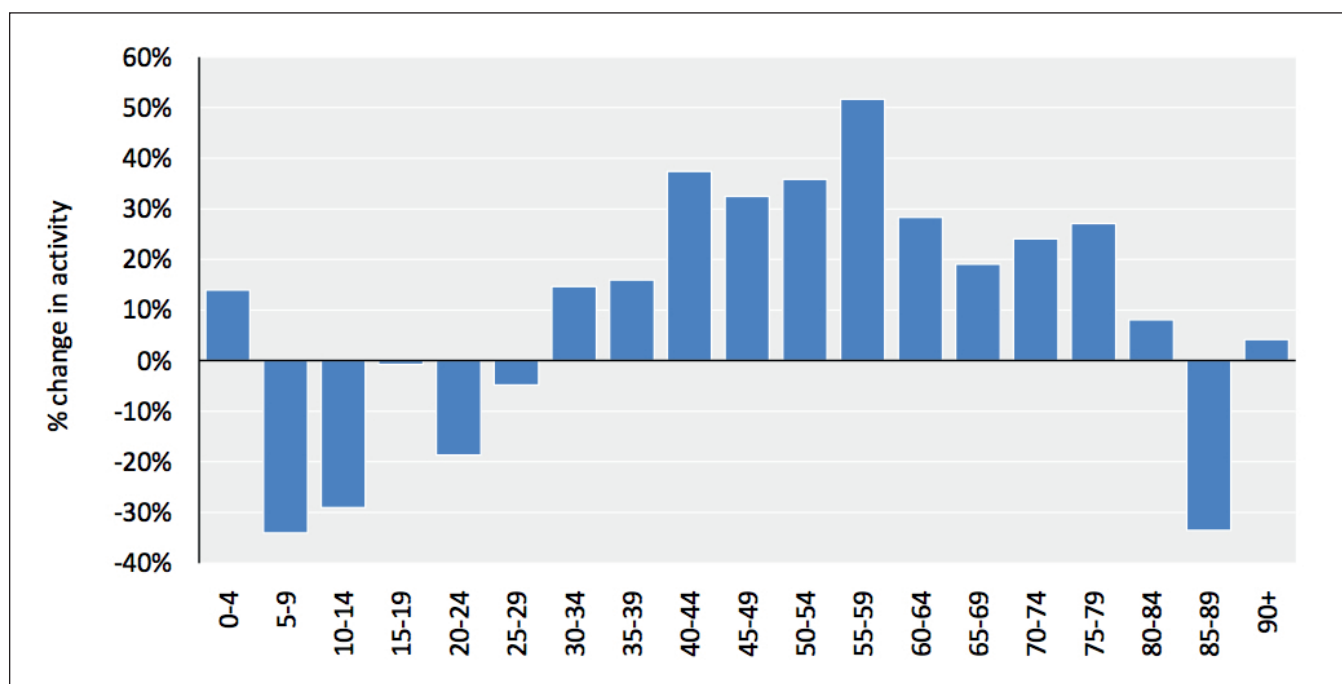
Figure 37 – Visits by age group (for the eight weeks after the campaign launch)

Age group	GP visits		Difference	
	2010	2011	Visits	% diff.
0 – 17	1,439	1,361	-78	-5.4%
18 – 29	417	360	-57	-13.7%
30 – 49	787	995	208	26.4%
50 – 69	1,149	1,519	370	32.2%
70 – 84	701	850	149	21.3%
85+	278	221	-57	-20.5%
Total	4,771	5,306	535	11.2%

Did the gender distribution of patients change?

Overall, of those attending with directly linked symptoms, there was a similar increase in men attending (23.0%) compared with women (22.0%), with men accounting for a higher number of attendances overall.

Figure 38 – Visits by gender (for the eight weeks after the campaign launch)

Gender	GP visits		Difference	
	2010	2011	Visits	% diff.
Male	1,716	2,093	377	22.0%
Female	1,190	1,464	274	23.0%
Unknown	9	28	19	-
Total	**2,915**	**3,585**	**670**	**23.0%**

5.3. Conclusions

There is clear evidence of an increase in attendances that starts one week after the campaign launch and continues for a further three weeks after its completion. The level of increase in attendances with directly linked symptoms was 23.0% over the eight weeks following the campaign launch when compared with the same eight weeks in the previous year. The key message promoted in the TV advert and other materials was for people who had a cough for three or more weeks to visit their GP. Read Codes do not record how long a patient has had symptoms, so it was not possible to evaluate whether patients were following this part of the advice and presenting with a cough of three or more weeks duration.

For those directly linked symptoms, the greatest increase was seen in those aged 50 and over, particularly those aged 50–69. This indicates that the campaign appeared to be reaching the target audience and prompting a behaviour change. There was, however, a decrease in visits by those over 85, although this represents a small number of actual visits (-57). There is no obvious reason why this might have occurred, and might be related to small numbers. In contrast, there was an increase in attendances by those aged 30–49, which suggests that while generally the targeting of those aged 50 and over was effective, there was also some impact on those younger and at a lower risk, and this should be considered for future campaigns.

This was an attempt to quantify the impact of the campaign on GP practices. Inevitably this can only be an estimate, as practices' size and demographics vary considerably and variation in the quality of Read Coding may mean that the study underestimates impact. However, based on this analysis, the impact of the increased activity following the campaign launch translated into an average of 2.4 additional visits per practice per week.

6. Urgent GP (two week wait) referrals for suspected lung cancer

The two week wait (2WW) standard for suspected cancer referrals was introduced by 2000 for all cancers, following the white paper '*The new NHS*' (Department of Health, 1997[4]) and stated that there should be a maximum two week wait for an outpatient appointment for urgent referrals where cancer is suspected. The preferred terminology for referrals from primary care to secondary care made under the 2WW criteria is 'urgent GP referral for suspected cancer' and this term will be used in the remainder of the report.

It was anticipated that if a person presented to the GP as a result of the campaign, and, following consultation and any further primary care requested diagnostics (eg chest x-ray), the GP was concerned the patient might have cancer, a referral to secondary care would be made, with the expected referral route being the urgent GP referral for suspected cancer pathway.

It would be expected that urgent GP referrals for suspected lung cancer would increase in the months surrounding the campaign.

6.1. Methods

Data on urgent GP referrals for suspected lung cancer were obtained through Public Health England's NCIN, from the National Cancer Waiting Times Monitoring Dataset provided by NHS England. Data from 27 (former) Primary Care Trusts (PCTs) in the pilot region (East and West Midlands) were compared with pooled data from all other PCTs nationally (n=124), which formed the control group. As the campaign did not start until 10 October 2011, any effects on referrals would not have been expected until further into that month. Analysis of GP attendances showed that there were increased attendances up to three weeks following the end of the campaign – that is until the end of November. This means that any resulting increase in urgent GP referrals for suspected cancer was likely to have been experienced until December at least. Therefore, the period October 2011 to December 2011 was compared with the same period the previous year (October 2010 to December 2010).

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[4] Department of Health (1997). The new NHS: modern, dependable. http://webarchive.nationalarchives.gov.uk/+/
www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH_4008869

6.2 Results

Did the number of urgent GP referrals for suspected lung cancer change?

Figure 39 shows the number of urgent GP referrals for suspected lung cancer between October 2010 and January 2012, for control and pilot areas. This shows the natural in-year variability. In addition, it indicates that while there appears to be an increase in urgent GP referrals for suspected lung cancer for both areas between 2010 and 2012, the increase seems greater between October 2011 and January 2012 in the pilot area.

Figure 39 – Number of urgent GP referrals for suspected lung cancer from October 2010 to January 2012, in control and pilot areas
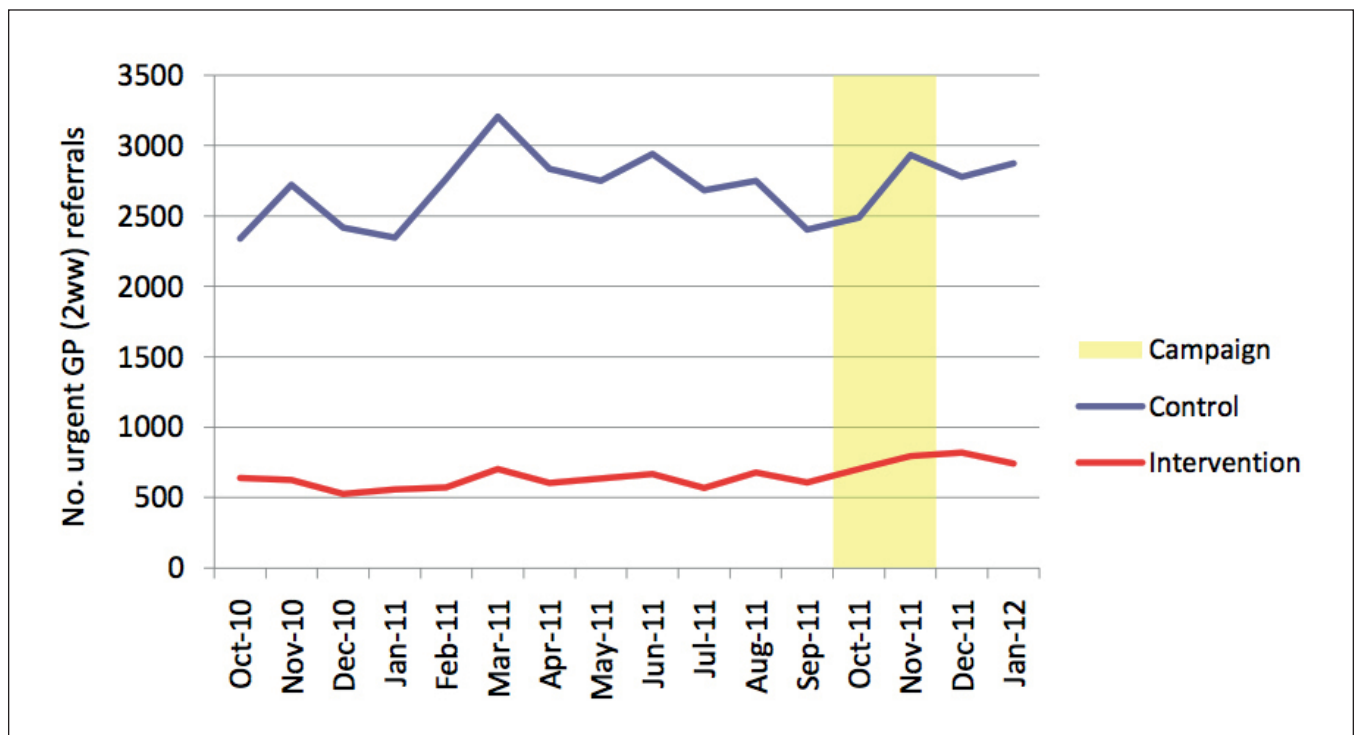
When looking at just the period associated with the campaign, including the month following its end (October 2011 to December 2011), figure 40 shows that there was an increase in urgent GP referrals for suspected lung cancer in both control and pilot areas when compared with the same period in the previous year. However, the increase in the pilot area (29.6%) is much greater than in the control area (9.6%).

Figure 40 – Percentage change in urgent GP referrals for suspected lung cancer in both pilot and control areas, comparing October 2011 – December 2011 with October 2010 – January 2011

Group	Urgent GP referrals for suspected lung cancer		
	Oct–Dec 2010	Oct–Dec 2011	% difference
Control area	7,480	8,201	+9.6%
Pilot area	1,789	2,319	+29.6%

On a monthly basis (see figures 41 and 42), the increase seen between October 2010 and 2011 in the pilot area is small, and similar to that seen in the control area (9.8% compared with 6.4%); this is likely to reflect the fact that the campaign only started on 10 October. However, the differences in the pilot area for both November (27.6%) and December (56.2%) are greater than those experienced in the control areas (7.8% and 14.9%, respectively). This pattern appeared to continue into January, although the increase (33.3%) was smaller than the increase for December in the pilot area (compared with a 22.5% in the control area in January). Data post- January 2012 was unavailable at the time of the analysis.

Figure 41 – Percentage change in urgent GP referrals for suspected lung cancer for pilot and control areas between October and December 2011 and 2010, broken down by month (not adjusted for working days)

	Control 2010	Control 2011	% difference	Pilot 2010	Pilot 2011	% difference
October	2,341	2,490	6.4	640	703	9.8
November	2,722	2,934	7.8	624	796	27.6
December	2,417	2,777	14.9	525	820	56.2

Figure 42 – Percentage change in urgent GP referrals for suspected lung cancer for pilot and control areas between October and December 2011, compared with the same months in the previous year
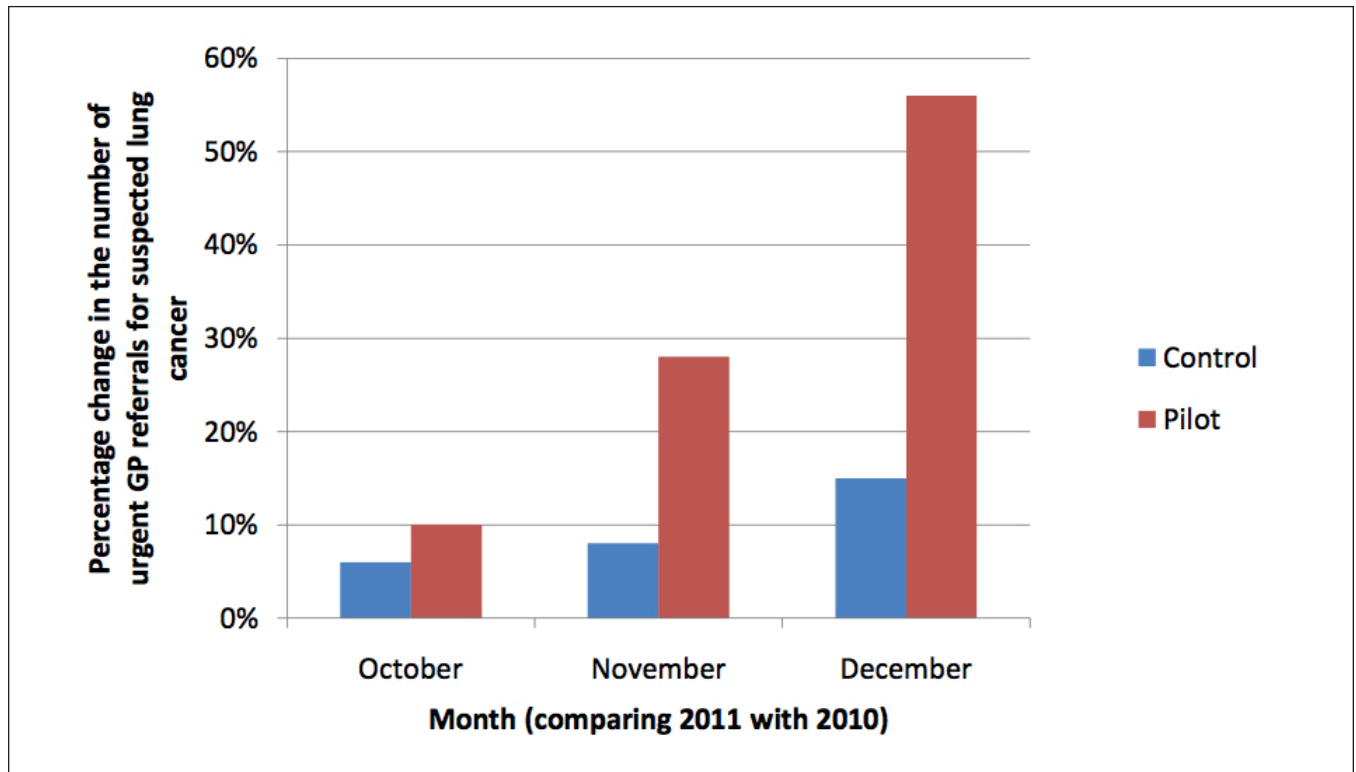
Did the age of those referred change?

Figure 43 shows the breakdown of urgent GP referrals for suspected lung cancer in the pilot area between October and December 2011, compared with the same period in 2010. From this it can be seen that there was a significant increase in the number of those referred in all the age bands from 50 years of age onwards, with the exception of those in the 65–69 age band.

Figure 43 – Age breakdown of urgent GP referrals for suspected lung cancer in the pilot area, October – December 2011 compared with October – December 2010 (not adjusted for working days)

Age group	No. Referrals			
	Oct–Dec 2010	Oct–Dec 2011	% Change	p Value
<40	38	49	28.9	0.238
40 – 44	57	69	21.1	0.285
45 – 49	68	92	35.3	0.057
50 – 54	105	142	35.2	0.018
55 – 59	154	194	26.0	0.032
60 – 64	236	301	27.5	0.005
65 – 69	309	334	8.1	0.324
70 – 74	259	370	42.9	<0.001
75 – 79	240	347	44.6	<0.001
80+	323	421	30.3	<0.001

6.3. Conclusions

There was a clear increase in urgent GP referrals for suspected lung cancer in the pilot area compared with the control area in the time period associated with the campaign.

Overall, there was an increase in the pilot area of 29.6% when comparing the period associated with the campaign (October – December 2011) with the same period the year before (October – December 2010). This compared with a 9.6% increase over the same periods in the control area.

In addition, it would seem that the increase in urgent GP referrals was significantly greater in those in the target audience (those aged 50 and over), with no significant increase in those younger than this target group.

Overall, it can be seen that there was increased activity experienced from the month following the start of the campaign for at least three months. Data past this time point were not available at the time of analysis.

7. Diagnostics

In order to begin to look at the impact of the campaign on the numbers of diagnostic tests carried out, and in the absence of a national dataset collecting radiological data for the time surrounding the campaign,[5] individual NHS trusts were approached for data collection.

7.1. Methods

Thirty-seven NHS trusts were approached for chest x-ray (CXR) and CT scan data; 33 in the pilot region and four outside the region to act as a control. Data were collected retrospectively from 25/33 (76%) NHS trusts in the pilot area using local trust radiology information systems.

For CXRs, data were provided by 25 trusts in the pilot area and two trusts in the control area. In addition, for chest CT scans, data were provided by 25 trusts in the pilot area and three trusts in the control area (see Appendix 1). Data for the periods June – December 2010 and June – December 2011 were collected and analysed using chi squared tests.

Please note that due to the very small number of control trusts, caution needs to be exercised when comparing the pilot and control areas

7.2. Results

Primary care diagnostics – chest x-rays (CXR)

If the campaign resulted in more people with symptoms suggestive of lung cancer attending primary care, then it would be expected that there would have been more GP-requested CXRs, as this is the main primary care diagnostic for lung cancer. However, CXRs are requested for a variety of non-cancer conditions, and so are not an absolute measure of any increase in suspected lung cancers. But as the main symptom of the campaign – cough for three weeks or more – is not limited to cancer, and CXRs are a key diagnostic tool for chest pathology, then any increase in CXR activity in the time period associated with the campaign will give an indication of the impact of the campaign overall.

Was there an increase in the number of chest x-rays undertaken?

In the four months immediately preceding the campaign (June – September 2011) there was a statistically significant greater increase in CXRs for those trusts in the control area (7.6%) than those in the pilot area (1.3%), when compared with the same four months in the previous year. In the period associated with the campaign (October – December 2011) there was an increase in both the pilot area (16.4%) and the control area (14.9%). This difference was not statistically significant. Caution needs to be exercised in interpretation because there were only two trusts in the control data.

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[5] The Diagnostic Imaging Dataset (DID) is now established, with trusts submitting data from their Radiology Information Systems on a monthly basis. Data contained in the DID began in April 2012.

Figure 44 – Percentage change in chest x-rays between June – September, and October – December 2011 compared to 2010, in control and intervention trusts (not adjusted for working days)
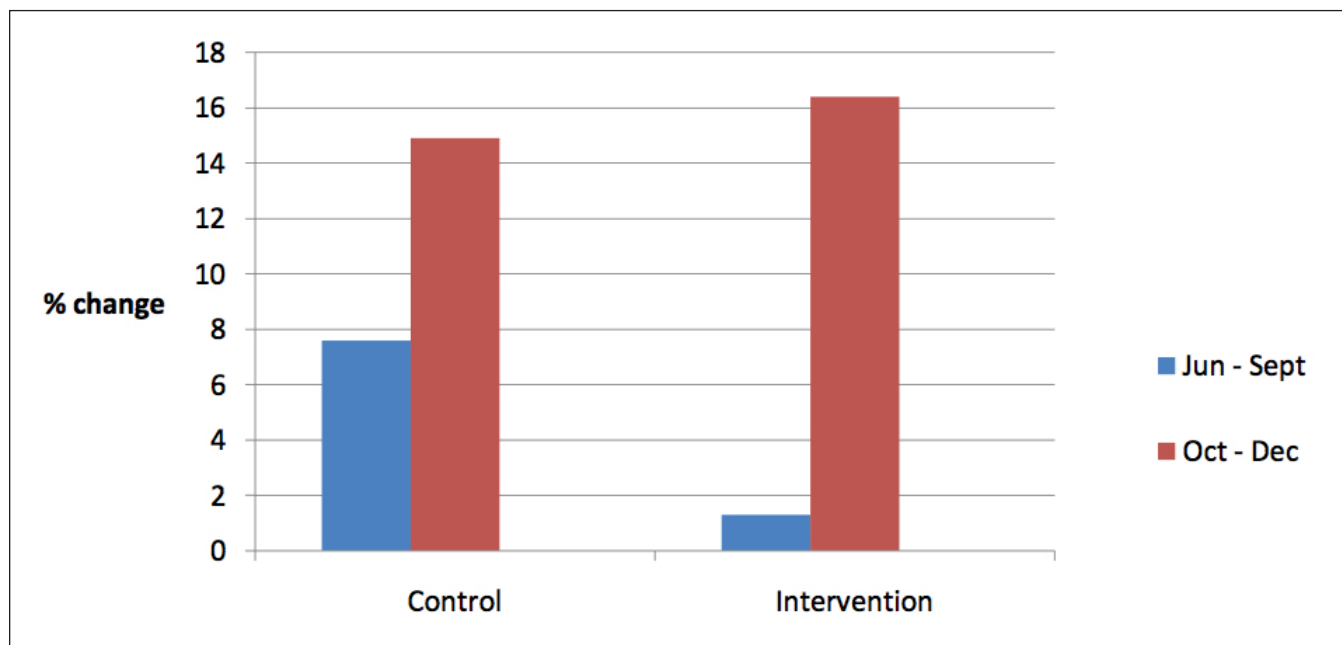
Of the 13,401 additional CXRs performed in the pilot trusts between October and December 2011, compared with October to December 2010, 61.3% were in those aged 50 years and over (figure 45). This was larger in the control trusts, with 76.3% of the additional CXRs in those aged 50 and over.

Figure 45 – Numbers of CXRs in pilot and control trusts comparing October – December 2011 with 2010, by age group (not adjusted for working days)

	Age group	No. CXRs Oct–Dec 2010	No. CXRs Oct–Dec 2011	Difference	% change
Pilot trusts	**All ages**	**81,811**	**95,212**	**13,401**	**16.4**
	≥50	57,760	65,969	8,209	14.2
	<50	24,051	29,243	5,192	21.6
Control trusts	**All ages**	**4,785**	**5,499**	**714**	**14.9**
	≥50	3,208	3,753	545	17.0
	<50	1,577	1,746	169	10.7

Diagnostics in secondary care – CT scans

CT scans are the usual diagnostic in secondary care to further investigate possible chest disease, usually following an abnormal CXR. As for CXRs, they are used to investigate a variety of chest conditions, and are not just used for suspected cancer.

Was there an increase in the number of CT scans undertaken?

Figures 47 and 48 show that there was a 15.8% increase in the number of chest CT scans in pilot trusts in October – December 2011 compared with the same period in 2010. Of this increase, 83.8% occurred in those aged 50 years and over. When comparing June – September 2011 with 2010, there was an 11.2% increase in CT scans across all ages in the pilot trusts (data not shown).

In the control trusts, this increase was 8.7% between the same October – December periods (71.3% of this being in those aged 50 and over). This compared with a decrease of -1.1% when comparing June – September 2011 with 2010 (data not shown).

There was no evidence that the increase seen in the pilot area was higher than that seen in the control area, although caution should be exercised in interpretation since only three trusts were included in the control area.

Figure 47 – Percentage changes in CT scans between October and December 2010 and 2011 for pilot and control trusts (not adjusted for working days)

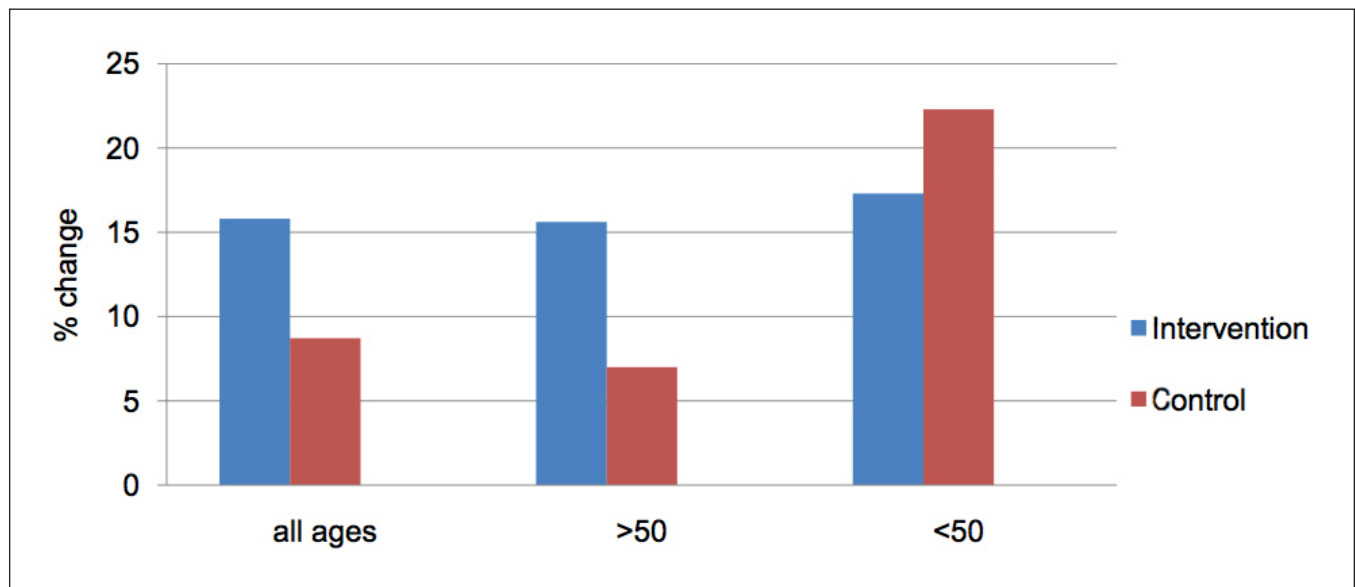|	Age group	Number of CT scans Oct–Dec 2010	Number of CT scans Oct–Dec 2011	Difference	% change
Pilot trusts (25 trusts)	**All ages**	**7,853**	**9,097**	**1244**	**+15.8**
	≥50	6,690	7,733	1043	+15.6
	<50	1,163	1,364	201	+17.3
Control trusts (3 trusts)	**All ages**	**1,324**	**1,439**	**115**	**+8.7**
	≥50	1,176	1,258	82	+7.0
	<50	148	181	33	+22.3

Figure 48 – Number of CT scans in pilot and control trusts between October and December 2010 and October and December 2011 by age group (not adjusted for working days)

7.3. Conclusions

Due to the lack of a national dataset for diagnostics covering the period of the campaign and its evaluation,[6] individual trusts were asked to submit data. This may have led to some inconsistencies in reporting, which cannot be quantified. In addition, the very small numbers of trusts in the control group means that comparisons between pilot and control trusts need to be interpreted cautiously.

Although the number of CXRs is not an exact measure of the level of suspected lung cancers seen in primary care, it provides a broad indication of any changes in the overall number of chest-related attendances requiring further investigation, of which lung cancer is one cause. Similarly, CT scans also provide an indication of the number of patients presenting to secondary care requiring further investigation, some of whom will have been referred with suspected lung cancer.

Although there was an increase in CXRs in pilot trusts (16.4%) in the time period associated with the campaign compared with the same period in the previous year, this was not significantly different from the increase in control trusts (14.9%). A similar pattern was seen for CT scans, with a 15.8% increase in scans in the pilot trusts in the period associated with the campaign, compared with 8.7% in control trusts; again, the difference between the areas was not significant.

It would appear therefore that there is no evidence from the data analysed of a significant increase in either primary care or secondary care diagnostics, as measured by CXRs and chest CT scans, in the period associated with the campaign. However, the limitations of the data analysed, in particular the small control group, are likely to have had an impact on the results.

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[6] The Diagnostic Imaging Dataset (DID) is now established, with trusts submitting data from their Radiology Information Systems on a monthly basis. Data contained in the DID began in April 2012.

8. Impact on clinical factors and outcomes

Other sections of this report have shown that the campaign, by raising awareness of the symptoms of lung cancer and encouraging people with possible symptoms to present to their GP, resulted in more people suspected of having lung cancer being referred to secondary care in the time period associated with the campaign. It would be expected that this would result in more cases of lung cancer being detected and, potentially, that those diagnosed had an earlier stage of disease and were thus more likely to be in a position to receive surgical treatment.

8.1. Methods

Data on cancers diagnosed, staging and one-year survival were obtained from the National Lung Cancer Audit dataset (NLCA also known as LUCADA), held by the HSCIC. Published audit data from 2010 (last published audit at the time of analysis) found that 93% of the expected numbers of new lung cancer cases were recorded in the NLCA database, which is thought to represent almost all cases that reach secondary care.[7]

An extract from the audit dataset was provided by HSCIC following approval from the Healthcare Quality Improvement Partnership (HQIP). This contained data from all trusts in England and Wales, with 32 pilot area trusts and 141 control area trusts (see Appendix 2 for full list). Data were provided for all trusts within the pilot area combined (pilot) and all trusts outside this area (control) on the following:

• lung cancer cases (excluding mesothelioma)
• cell type
• age band
• stage (small cell lung cancer)
• stage (non small cell lung cancer [including carcinoid tumours])
• performance status
• first definitive treatment
• source of referral
• one-year survival

Data were aggregated across October to December 2011 and compared with data from October to December 2010 in both pilot and control trusts. Data were not adjusted for working days.

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[7] National Lung Cancer Audit Report (2011). http://www.hscic.gov.uk/lung

Please note that data are based on the month the patient was first seen for lung cancer (not the month they were diagnosed). The NLCA definition of date first seen is as follows:[8]

The date of the patient's first contact with a member of the lung cancer specialist team:

• date of first outpatient appointment (for lung cancer)
• date of outpatient visit when a diagnosis of (lung) cancer was first considered
• date the patient is first seen by the (lung cancer) specialist team in hospital for within-hospital referrals
• date of first booked diagnostic procedure (for lung cancer) if this precedes the first outpatient appointment
• date seen as an emergency, if the patient was first seen as an emergency (within a lung cancer pathway)

8.2. Results

Did the number of cancers diagnosed increase?

Figure 49 shows that trusts in the pilot area saw a 14.0% increase (95% Confidence Interval (CI): 6.3% to 22.4%) in the number of lung cancer cases (excluding mesothelioma) diagnosed between October and December 2011 (the period associated with the effects of the campaign) and the same period in 2010. This compared with a 4.7% increase (95% CI: 0.8% to 8.8%) in control area trusts over the same period. This effect is also seen in figures 50 and 51. The increase in the pilot trusts was not significantly higher than the increase in the control trusts.

Figure 49 – Lung cancer cases (excluding mesothelioma) diagnosed in pilot and control trusts* (not adjusted for working days)

	Pilot trusts			Control trusts		
	Oct–Dec 2010	Oct–Dec 2011	% change	Oct–Dec 2010	Oct–Dec 2011	% change
Cases	1,446	1,649	+14.0%	5,226	5,473	+4.7%
	Jan–Sept 2010	Jan–Sept 2011	% change	Jan–Sept 2010	Jan–Sept 2011	% change
Cases	4,837	4,893	+1.2%	17,093	17,658	+3.3%
	Jan–Dec 2010	Jan–Dec 2011	% change	Jan–Dec 2010	Jan–Dec 2011	% change
Cases	6,283	6,542	+4.1%	22,319	23,131	+3.6%

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[8] HSCIC (2013). The National Clinical Lung Cancer Audit (LUCADA) Data Manual, Version 3.1.5. Available from www.hscic.gov.uk/lung

Figure 50 – Number of lung cancer cases (excluding mesothelioma) diagnosed in pilot trusts in 2010 and 2011
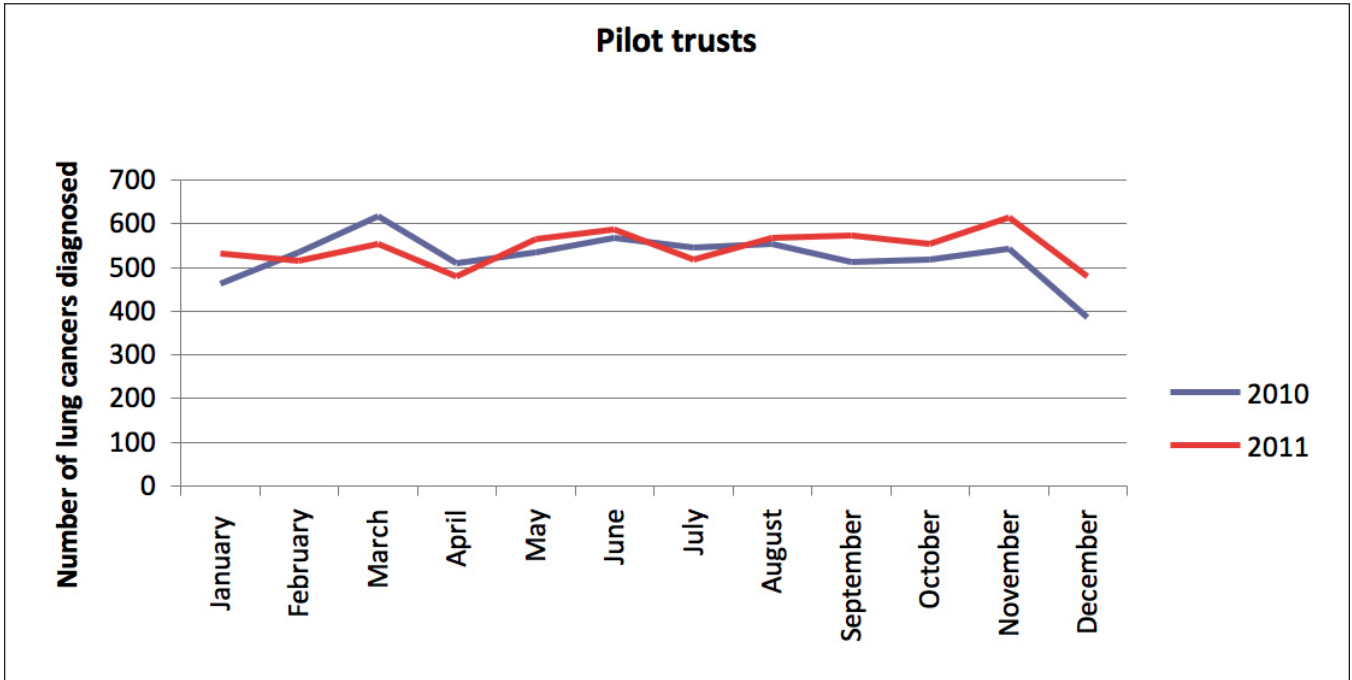
Figure 51 – Number of lung cancer cases (excluding mesothelioma) diagnosed in control area trusts in 2010 and 2011
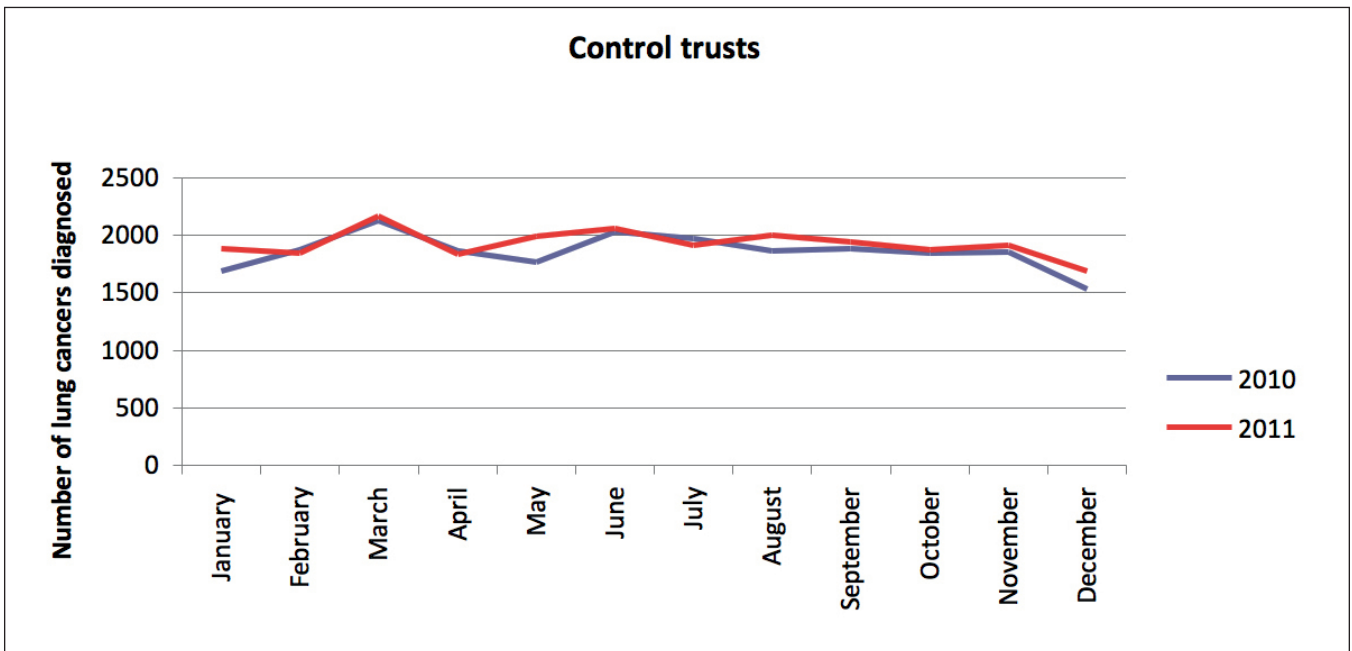
Did the cell type of cancers detected change?

There are two main types of lung cancer: Small Cell Lung Cancers (SCLC), which tend to be more aggressive, and Non Small Cell Lung Cancers (NSCLC), which include carcinoid tumours.

Figure 52 shows that in pilot trusts there was a slightly higher proportion of lung cancers diagnosed as NSCLC in October to December 2011 (87.8% compared with 86.6% in the same period in 2010), but this was not significant. However, there was a small, but significant increase in carcinoid tumours diagnosed in the pilot trusts (1.3% in October – December 2011 compared with 0.4% in the same period in 2010).

There was no significant difference in the proportion of NSCLC and SCLC overall between the pilot and control trusts associated with the campaign period.

Figure 52 – Type of lung cancer diagnosed in pilot and control trusts

Lung cancer type	Pilot trusts			Control trusts		
	Oct–Dec 2010	Oct–Dec 2011	% change	Oct–Dec 2010	Oct–Dec 2011	% change
Carcinoid	6 (0.4%)	22 (1.3%)	+0.9	28 (0.5%)	38 (0.7%)	+0.2
NSCLC	1,252 (86.6%)	1,447 (87.8%)	+1.2	4,617 (88.3%)	4,803 (87.8%)	-0.5
SCLC	188 (13.0%)	180 (10.9%)	-2.1	581 (11.1%)	632 (11.5%)	+0.4
Total	1,446 (100.0%)	1,649 (100.0%)		5,226 (100.0%)	5,473 (100.0%)	

Did the age of people diagnosed with lung cancer change?

Figure 53 shows that within the pilot trusts there was a decrease in the proportion of diagnoses that were in those less than 55 years of age (5.2% in October – December 2011 compared with 7.6% in the same months of the previous year), and an increase in the proportion diagnosed at 85 years or older (11.9% compared to 9.6%). Overall this meant that there was a significant difference in the age distribution of those diagnosed between October and December 2011 compared with the same period in 2010.

In the control trusts, there was no significant difference seen in the age distribution between these two time periods.

Figure 53 – Total number of cases seen in pilot and control trusts in October to December 2010 and October to December 2011, by age

Age band	Pilot trusts			Control trusts		
	Oct–Dec 2010	Oct–Dec 2011	% change	Oct–Dec 2010	Oct–Dec 2011	% change
0 – 54	110 (7.6%)	85 (5.2%)	-2.5	363 (6.9%)	312 (5.7%)	-1.2
55 – 59	114 (7.9%)	124 (7.5%)	-0.4	375 (7.2%)	365 (6.7%)	-0.5
60 – 64	161 (11.1%)	181 (11.0%)	-0.2	648 (12.4%)	665 (12.2%)	-0.2
65 – 69	245 (16.9%)	269 (16.3%)	-0.6	785 (15.0%)	859 (15.7%)	+0.7
70 – 74	225 (15.6%)	285 (17.3%)	+1.7	914 (17.5%)	956 (17.5%)	0.0
75 – 79	263 (18.2%)	273 (16.6%)	-1.6	861 (16.5%)	919 (16.8%)	+0.3
80 – 84	189 (13.1%)	235 (14.3%)	+1.2	716 (13.7%)	779 (14.2%)	+0.5
85+	139 (9.6%)	197 (11.9%)	+2.3	564 (10.8%)	618 (11.3%)	+0.5
Total	1,446 (100.0%)	1,649 (100.0%)		5,226 (100.0%)	5,473 (100.0%)	

Did the stage at diagnosis change?

Stage of SCLCs

Staging completeness of SCLCs increased in both pilot and control trusts from October – December 2010 to October – December 2011, although the improvement was larger in the control trusts (88.3% to 91.1%, and 89.7% to 94.9% in the pilot and control trusts respectively).

Figure 54 shows that of the SCLCs that did have a recorded stage, there was a significant decrease in the percentage of SCLCs coded as having 'extensive' disease from October – December 2010 to October – December 2011 (74.1% to 63.4%). The corresponding increase in the percentage of SCLCs coded as having 'limited' disease therefore went up from October – December 2010 to October – December 2011, from 25.9% to 36.6%. A similar, but much smaller, non-significant trend was found for the control trusts.

Figure 54 – Staging data for SCLC

Stage	Pilot trusts		Control trusts	
	Oct–Dec 2010	Oct–Dec 2011	Oct–Dec 2010	Oct–Dec 2011
SCLC – Limited	43 (25.9%)	60 (36.6%)	141 (27.1%)	174 (29.0%)
SCLC – Extensive	123 (74.1%)	104 (63.4%)	380 (72.9%)	426 (71.0%)
Total	166 (100.0%)	164 (100.0%)	521 (100.0%)	600 (100.0%)

Stage of NSCLC and carcinoid tumours

Staging completeness of NSCLCs and carcinoid tumours increased similarly in both pilot and control trusts from October – December 2010 to October – December 2011, although control trusts had a slightly higher percentage of cases with certain/known stage (see figure 55).

Figure 55 – Completeness of staging data – NSCLCs

Pilot trusts			Control trusts		
Percentage of cases with certain/known stage		Percentage point change	Percentage of cases with certain/known stage		Percentage point change
Oct–Dec 2010	Oct–Dec 2011		Oct–Dec 2010	Oct–Dec 2011	
82.4% (1,036/1,258)	88.1% (1,294/1,469)	+5.7	85.7% (3,982/4,645)	91.7% (4,438/4,841)	+6.0

Of these tumours, there was a higher proportion diagnosed as stage I and II in October to December 2011 compared with the same period in 2010 in pilot trusts (24.6% compared with 22.3%); and with stage IIIA (12.6% compared to 10.3%; see figures 56 and 57). There was a correspondingly lower proportion diagnosed at stage IIIB and IV (62.8% compared with 67.4%). However, this shift was not statistically significant. There was no evidence of a difference in stage at diagnosis in the control trusts between these two periods.

Figure 56 – Staging data for NSCLC (including carcinoid tumours)

	Pilot trusts		Control trusts	
Stage	Oct–Dec 2010	Oct–Dec 2011	Oct–Dec 2010	Oct–Dec 2011
I & II	231 (22.3%)	318 (24.6%)	922 (23.2%)	1,038 (23.4%)
IIIA	107 (10.3%)	163 (12.6%)	539 (13.5%)	599 (13.5%)
IIIB & IV	698 (67.4%)	813 (62.8%)	2,521 (63.3%)	2,801 (63.1%)
Total (I–IV)	1,036 (100.0%)	1,294 (100.0%)	3,982 (100.0%)	4,438 (100.0%)

Figure 57 – Stage at diagnosis for patients in the pilot trusts in October to December 2010, and October to December 2011
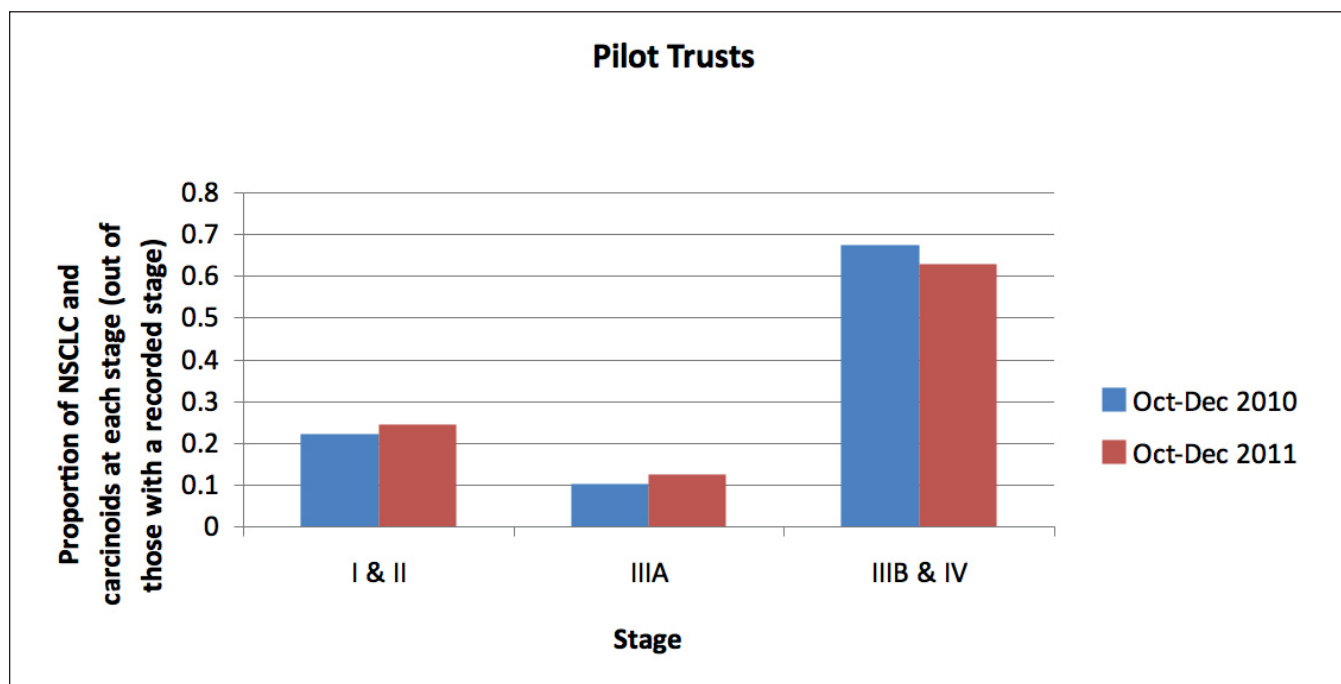
Did the performance status of patients change?

Performance status refers to an assessment of a patient's fitness for treatment, with those assessed as having performance status 0 or 1 having better fitness for treatment than those with 2, 3 or 4.

Figure 58 shows that there was a slight increase (57.6% from 53.2%) in the proportion of patients whose performance status was assessed as being 0 or 1 in pilot trusts during October to December 2011, compared with the same period in 2010; with a consequent decline in those assessed as 2, 3 or 4. However, this slight change in distribution of performance status was not statistically significant. There was no difference between the time periods for the control trusts.

Figure 58 – Performance status data

Performance status	Pilot trusts		Control trusts	
	Oct–Dec 2010	Oct–Dec 2011	Oct–Dec 2010	Oct–Dec 2011
0 and 1	640 (53.2%)	807 (57.6%)	2,278 (51.5%)	2,560 (51.9%)
2	252 (20.9%)	258 (18.4%)	962 (21.7%)	1,043 (21.2%)
3 and 4	312 (25.9%)	335 (23.9%)	1,186 (26.8%)	1,327 (26.9%)
Total (0–4)	1,204 (100.0%)	1,400 (100.0%)	4,426 (100.0%)	4,930 (100.0%)

Did the first definitive treatment change?

The time taken for a patient to progress through the diagnosis and treatment pathway is such that not all patients who might have presented after seeing the campaign advertising would have received treatment within the time frame studied in this analysis, which should be considered when interpreting this analysis.

Figure 59 shows that there was a significant increase in the proportion of patients who underwent a surgical resection as the first definitive treatment in the pilot trusts during October – December 2011, compared with the same period in 2010 (16.0% compared to 12.4%).

In addition, there was a decrease in the proportion of patients on active monitoring between the same time periods (9.8% from 11.9%), which was statistically significant.

Neither of these findings were seen in control trusts.

Figure 59 – First definitive treatment data – all treatment options

First definitive treatment*	Pilot trusts		Control trusts	
	Oct–Dec 2010	Oct–Dec 2011	Oct–Dec 2010	Oct–Dec 2011
Surgery	180 (12.4%)	264 (16.0%)	618 (11.8%)	696 (12.7%)
Chemotherapy	334 (23.1%)	384 (23.3%)	1,213 (23.2%)	1,369 (25.0%)
Radiotherapy	291 (20.1%)	296 (18.0%)	944 (18.1%)	956 (17.5%)
Palliative	354 (24.5%)	416 (25.2%)	1,208 (23.1%)	1,264 (23.1%)
Active monitoring	172 (11.9%)	161 (9.8%)	649 (12.4%)	648 (11.8%)
Any treatment**	1,319 (91.2%)	1,511 (91.6%)	4,565 (87.4%)	4,851 (88.6%)
No treatment***	127 (8.8%)	138 (8.4%)	661 (12.6%)	622 (11.4%)
Total	1,446 (100.0%)	1,649 (100.0%)	5,226 (100.0%)	5,473 (100.0%)

*Note that patients are counted more than once if they have multiple treatment types on the earliest treatment date.

**Number of patients receiving any treatment (surgery, chemotherapy, radiotherapy [includes external beam therapy and brachytherapy], palliative care or active monitoring).

***Patients with no treatment type recorded in the database. However, some patients may have had treatment that has not been recorded.

Did the source of referral change?

The NLCA dataset records the source of referral of cases. There was between 96% and 98% completeness of this item within the trusts in the periods of the analysis.

In both the pilot and control trusts, there was a small decrease in the percentage of cases who came via the emergency route between October – December 2010 and October – December 2011. While this drop was not significant in the pilot trusts (15.5% to 13.5%; p=0.12), it was in the control trusts (13.6% to 12.1%; p=0.02).

Did one-year survival change?

To allow for different age structures between areas and to make them more comparable with other survival data, the one-year crude survival results were age-standardised using International Cancer Survival Standards (ICSS).

Although published lung cancer audit data from 2010 suggested that 93% of the expected numbers of lung cancer cases were captured in the NLCA database, comparison with the numbers of registered cases by the Office for National Statistics for England suggested this figure is nearer 85%. The cases that are not captured in NLCA are likely to be for those patients who do not reach secondary care, and are more likely to be the poorer prognosis cases. Thus, the one-year survival estimates reported here are higher than those reported elsewhere.

For the pilot trusts, one-year survival increased from 35.2% to 39.2% (p=0.02), whereas the increase for the control trusts was smaller, from 37.3% to 39.3%, but still significant. These figures are similar to the size of the increase seen in surgical resection rates in the pilot and control trusts, respectively. However, there was no evidence to suggest the increases were different between the pilot and control areas (see Ironmonger *et al* (2015) for more details).

8.3. Conclusions

Overall, there was an increase of 14.0% in the number of lung cancer cases in the pilot trusts in the period associated with the campaign compared with the previous year, compared with a 4.7% change in control trusts (although the increase was not significantly larger in pilot trusts).

Of those diagnosed cases, there was a significant difference in the age distribution in the time period associated with the campaign, with a lower proportion of cases being <55 years of age and a higher proportion being 85 years and over.

While there was no evidence of changes in cancer cell type, with the exception of carcinoid tumours, the findings suggest a slight increase in the proportion of NSCLC tumours associated with the campaign period, which is in contrast to the pattern found in the control trusts. In addition, staging data showed significantly more SCLCs staged as 'limited' and some evidence of more NSCLCs (including carcinoid tumours) diagnosed at an earlier stage in the pilot trusts, although this was not statistically significant. These results were not replicated in the control trusts.

Performance status data also showed a trend towards patients with lower performance status (that is having better fitness for treatment) at diagnosis in the pilot trusts, although this was not statistically significant. There was, however, a significant increase in surgical resection rates in the pilot trusts (from 12.4% to 16.0%) which was not seen in the control trusts. Of the treatment options recorded, surgical resection is the treatment that is most likely to have a positive impact on long-term survival.

One-year crude survival increased significantly in both the pilot trusts (35.2% to 39.2%) and control trusts (although the change was smaller here: 37.3% to 39.3%). These figures are similar to the size of the increase seen in surgical resection rates in the intervention and control trusts. However, there may be some lead-time bias (ie the increases in one-year crude survival may reflect patients being diagnosed earlier but ultimately dying at the same time) or overdiagnosis (where patients are diagnosed sooner but die of something else before the lung cancer would have killed them). These should be considered when interpreting the results.

In terms of route to referral, there seems to have been a non-significant slight drop in emergency presentations during the time period associated with the campaign in the pilot trusts, but also was significant in control trusts. However, while completeness for this item is high, it is recognised that the accuracy of the data in this field is probably less good than other aspects of the audit dataset, and route of referral would probably be better derived from other sources.

The very short nature of the campaign together with the potential diluting effect of other local campaigns, the findings suggest that there has been a generally positive impact of the campaign on lung cancers detected. A greater number of cases were diagnosed in which there were trends towards a lower performance status at diagnosis; a higher proportion of NSCLC (including carcinoid tumours) diagnosed at an earlier stage; a significantly higher proportion of SCLCs diagnosed at 'limited' rather than 'extensive' disease stage; a significantly higher proportion of first treatments which were surgery; and a significantly higher one-year crude survival.

9. Overall discussion of findings

The campaign objectives were to:

• raise the awareness of the signs and symptoms of lung cancer among the target audience (those aged 50 and over and from a lower socio-economic group)

• increase the presentation of symptoms of lung cancer by the target audience to primary care

This section considers whether, and how far, these objectives were achieved.

In terms of reach, the campaign appears to have been successful. The evaluation identified that there was a lot of 'background noise' in terms of general cancer publicity, with 75% of respondents in the pilot area and 63% in the control area having unprompted awareness of general cancer publicity pre-campaign. However, when asked to recall what type of cancer featured in the advertising or publicity they were referring to, mentions of lung cancer from respondents in the pilot area increased from 16% pre- to 46% post-campaign, compared with an increase of 9% to 22% in the control area. In addition, 70% of respondents in the pilot area recognised at least one of the campaign adverts, compared with 28% in the control area. TV proved to be the most recognised element of the campaign.

It would also seem that the campaign was successful in communicating its main message, with an increase from 13% before the campaign to 18% after it, of respondents in the pilot area identifying, unprompted, a persistent or prolonged cough as a sign of lung cancer. Of interest, overall prompted recall of signs and symptoms of lung cancer showed no real difference in pilot and control areas after the campaign, which suggests that there is already a background level of awareness as a result of other campaigns and information. However, it was encouraging to note that there was an increase in the proportion of respondents from the pilot area who recognised appropriate symptoms as 'definitely' rather than 'probably' warning signs, compared with the control areas, which suggests that people are more certain of their knowledge as a result of the campaign.

The campaign did not seem to have an impact on people's beliefs or attitudes towards cancer. This is not entirely unexpected given that the campaign was not explicitly designed to do this, the short duration of the campaign, and because beliefs about the benefits of early presentation were largely positive at the outset in both the pilot and control areas. Although there was a small increase in the number of people in the pilot area saying they would visit their doctor after three weeks (in line with the key campaign message), the majority had not taken any action as a result of seeing the campaign. This is not unexpected given the proportion of the target audience likely to have relevant symptoms at the time of the campaign.

The campaign also appears to have had some cut through with GPs. Among the GPs surveyed, more of those in the pilot area remembered lung cancer adverts and there was higher recognition of the line 'Be Clear on Cancer' than among those in the control area. Encouragingly, nearly half (46%) of GPs in the pilot area remembered receiving a factsheet or an email about the campaign, with email channels proving to be the most memorable, particularly those from the Royal College of General Practitioners. This highlights the potential impact endorsement by professional bodies can have on this type of communication.

Overall, therefore, it can be concluded that the first objective was achieved.

In terms of the second objective, there is evidence to suggest an increase in attendances to GPs for a potential lung cancer symptom as a result of the campaign, with a 23.0% increase in attendances in the pilot area for directly linked symptoms (primarily cough), compared with a small reduction for control symptoms, over the eight-week period following the campaign launch. While most of the increase in attendances was for cough-related symptoms, it was not possible to identify whether this was a cough lasting three weeks or more.

There was no apparent increase in attendances for other possible lung cancer symptoms.

In addition, most of the increase in attendances was seen in those aged 50 years and over; confirming that the campaign reached its target group. There was, however, an increase in those aged 30-49 (28.6% of total increase), and this needs consideration for future campaign planning.

This increase lasted for a total of eight weeks, beginning a week after the launch of the campaign and lasting for three weeks after its conclusion. Overall it has been estimated that the additional activity generated by the campaign resulted in an average of 2.4 additional visits per practice. Both these finding should help with planning other campaigns.

A consequence of this increase in attendances seems to be an increase in urgent GP (2WW) referrals for lung cancer between October and December 2011 (+29.6%), compared with the same period in 2010, which was higher than the increase in control areas (+9.6%). The pattern of increase seems to reflect that of GP attendances, and indicates that the general pattern was that these attendances were potentially appropriate given the increase in urgent GP (2WW) referrals that occurred.

GP attendances increased in mid-October 2011 a week after the campaign launch, and continued for a total of eight weeks. Urgent GP referrals (2WW) saw only a very small increase in October, with much greater rates in November and December 2011 (27.6% and 56.2%, respectively), and a continued increase in January 2012 (33.3%), although the rate of increase was declining by this stage. It is not possible to tell how long the increase continued as data were only analysed up until January 2012. From this it appears that the increase lasted for at least three months from the start of the campaign.

Of those referrals, there was a significant increase in those aged over 50 years of age, with no significant change in younger age groups.

It would have been expected that demand for diagnostics to support primary and secondary care would have increased as a result of the increase in GP attendance and referral activity. However, there is no evidence from the analysis of NHS trust supplied data of any significant change in levels of either CXRs or chest CT scans in pilot trusts between October and December 2011, compared with the same period in 2010 and against control trusts. However, this finding may in part be due to the fact that there were no national routine data available to measure the uptake for these diagnostics, and, therefore, trusts were requested to provide data to support this evaluation. This may have led to differences in reporting and some under reporting. In addition, only a very small number of control trusts (two) provided data, meaning that any comparisons between pilot and control trust activity need to be interpreted with caution.

In terms of numbers of cancers diagnosed, there was an increase in the number of lung cancers diagnosed in pilot trusts between October and December 2011 compared with the same period in 2010, and versus control trusts (14.0% versus 4.7%). However, the increase in pilot trusts was not significantly higher than the control trusts. It is almost certain that this is an underestimate of the number of cancers diagnosed that seem to be associated with the campaign timing. This is due to the short time period under study (October to December 2011) and the expectation that a number of diagnoses would have been made outside of this timeframe and into 2012, which is outside the reporting timeframe of the 2011 NLCA dataset (later data were not available at the time of analysis). Therefore it is reasonable to assume that the final number of lung cancers diagnosed which were potentially a result of this campaign was higher.

In addition, of those cancers diagnosed which were associated with the timing of the campaign, a greater proportion of cancers were detected in the target age group, suggesting that the campaign did reach its target audience.

To support these positive findings, there was a significantly higher proportion of SCLCs diagnosed as 'limited' rather than 'extensive' and a significantly higher proportion of first treatments which were surgery, which offers the best outcome for patients, compared to the same period in 2010 and against control areas. These findings, together with a suggestive trend towards both improved performance status of patients at diagnosis and a higher proportion of NSCLCs diagnosed with early stage disease, all suggest an overall encouraging pattern of more cancers potentially diagnosed at an earlier stage, and so amenable to surgery. A significant increase in one-year survival was evident in both the pilot and control trusts.

The data analysed suggest that the campaign was successful in achieving both its stated objectives. There was an increase in lung cancers diagnosed in the immediate period associated with the campaign, of which a greater proportion were in the target group and showed indications of being at an earlier stage. This suggestive evidence of a link between awareness raising, increased presentation and referral activity, resulting in a positive trend in cancers diagnosed in the target group, and at an earlier stage, is an extremely encouraging and important finding to support this programme of activity.

Appendix 1: Pilot trusts included in the CT scan and chest x-ray analysis

The 25 NHS trusts that supplied CT scan and chest x-ray data for this report were (in alphabetical order):

NHS trust	Trust type
University Hospitals Bristol NHS Foundation Trust	Control
Buckinghamshire Healthcare NHS Trust	Periphery
Burton Hospitals NHS Foundation Trust	Core
Calderdale and Huddersfield NHS Foundation Trust	Control
Chesterfield Royal Hospital NHS Foundation Trust	Core
Derby Hospitals NHS Foundation Trust	Core
Doncaster and Bassetlaw Hospitals NHS Foundation Trust	Periphery
The Dudley Group of Hospitals NHS Foundation Trust	Core
East Cheshire NHS Trust	Periphery
Gloucestershire Hospitals NHS Foundation Trust	Core
Great Western Hospitals NHS Foundation Trust	Core
Heart of England NHS Foundation Trust	Core
University Hospitals of Leicester NHS Trust	Core
Liverpool Heart and Chest Hospital NHS Foundation Trust	Control (CT scan data only)
Mid Cheshire Hospitals NHS Foundation Trust	Periphery
Mid Staffordshire NHS Foundation Trust	Core
Milton Keynes Hospital NHS Foundation Trust	Core
Nottingham University Hospitals NHS Trust	Core
Papworth Hospital NHS Foundation Trust	Periphery
Peterborough and Stamford Hospitals NHS Foundation Trust	Core
Royal Berkshire NHS Foundation Trust	Periphery
Sherwood Forest Hospitals NHS Foundation Trust	Core
The Robert Jones and Agnes Hunt Orthopaedic Hospital NHS Foundation Trust	Core
University Birmingham Hospitals NHS Foundation Trust	Core
Nottingham University Hospitals NHS Trust	Core
West Hertfordshire Hospitals NHS Trust	Periphery
Worcestershire Acute Hospitals NHS Trust	Core
Wye Valley NHS Trust	Core

Appendix 2: Pilot and control trusts included in the NLCA analysis

Pilot trusts

Code	Name	Code	Name
RBK	WALSALL HEALTHCARE NHS TRUST	RR1	HEART OF ENGLAND NHS FOUNDATION TRUST
RBT	MID CHESHIRE HOSPITALS NHS FOUNDATION TRUST	RRK	UNIVERSITY HOSPITALS BIRMINGHAM NHS FOUNDATION TRUST
RC1	BEDFORD HOSPITAL NHS TRUST	RTE	GLOUCESTERSHIRE HOSPITALS NHS FOUNDATION TRUST
RC9	LUTON AND DUNSTABLE HOSPITAL NHS FOUNDATION TRUST	RTG	DERBY HOSPITALS NHS FOUNDATION TRUST
RD8	MILTON KEYNES HOSPITAL NHS FOUNDATION TRUST	RTH	OXFORD UNIVERSITY HOSPITALS NHS TRUST
NRFS	CHESTERFIELD ROYAL HOSPITAL NHS FOUNDATION TRUST	RWE	UNIVERSITY HOSPITALS OF LEICESTER NHS TRUST
RGM	PAPWORTH HOSPITAL NHS FOUNDATION TRUST	RWG	WEST HERTFORDSHIRE HOSPITALS NHS TRUST
RGN	PETERBOROUGH AND STAMFORD HOSPITALS NHS FOUNDATION TRUST	RWP	WORCESTERSHIRE ACUTE HOSPITALS NHS TRUST
RHW	ROYAL BERKSHIRE NHS FOUNDATION TRUST	RX1	NOTTINGHAM UNIVERSITY HOSPITALS NHS TRUST
RJD	MID STAFFORDSHIRE NHS FOUNDATION TRUST	RXK	SANDWELL AND WEST BIRMINGHAM HOSPITALS NHS TRUST
RJE	UNIVERSITY HOSPITAL OF NORTH STAFFORDSHIRE NHS TRUST	RXQ	BUCKINGHAMSHIRE HEALTHCARE NHS TRUST
RJF	BURTON HOSPITALS NHS FOUNDATION TRUST	RXW	SHREWSBURY AND TELFORD HOSPITAL NHS TRUST
RJN	EAST CHESHIRE NHS TRUST		
RK5	SHERWOOD FOREST HOSPITALS NHS FOUNDATION TRUST		
RL4	THE ROYAL WOLVERHAMPTON HOSPITALS NHS TRUST		
RLQ	WYE VALLEY NHS TRUST		
RMP	TAMESIDE HOSPITAL NHS FOUNDATION TRUST		
RN3	GREAT WESTERN HOSPITALS NHS FOUNDATION TRUST		
RNA	THE DUDLEY GROUP NHS FOUNDATION TRUST		
RP5	DONCASTER AND BASSETLAW HOSPITALS NHS FOUNDATION TRUST		

Control trusts

Code	Name
5PA	LEICESTERSHIRE COUNTY AND RUTLAND PCT
7A1A1	YSBYTY GLAN CLWYD
LLCU	LIVERPOOL LUNG CANCER UNIT
NT212	NUFFIELD HEALTH, CHICHESTER HOSPITAL
NT244	NUFFIELD HOSPITAL OXFORD (THE MANOR)
NT309	SPIRE SUSSEX HOSPITAL
NT322	SPIRE LEICESTER HOSPITAL
NT413	BMI – THE ESPERANCE HOSPITAL
NT423	BMI – THE MANOR HOSPITAL
NT807	CAPIO MOUNT STUART HOSPITAL
NTY70	MOUNT ALVERNIA HOSPITAL
RA2	ROYAL SURREY COUNTY HOSPITAL NHS FOUNDATION TRUST
RA3	WESTON AREA HEALTH NHS TRUST
RA4	YEOVIL DISTRICT HOSPITAL NHS FOUNDATION TRUST
RA7	UNIVERSITY HOSPITALS BRISTOL NHS FOUNDATION TRUST
RA9	SOUTH DEVON HEALTHCARE NHS FOUNDATION TRUST
RAE	BRADFORD TEACHING HOSPITALS NHS FOUNDATION TRUST
RAJ	SOUTHEND UNIVERSITY HOSPITAL NHS FOUNDATION TRUST
RAL	ROYAL FREE LONDON NHS FOUNDATION TRUST
RAP	NORTH MIDDLESEX UNIVERSITY HOSPITAL NHS TRUST
RAS	THE HILLINGDON HOSPITALS NHS FOUNDATION TRUST
RAX	KINGSTON HOSPITAL NHS TRUST
RBA	TAUNTON AND SOMERSET NHS FOUNDATION TRUST

Code	Name
RBD	DORSET COUNTY HOSPITAL NHS FOUNDATION TRUST
RBF03	NUFFIELD ORTHOPAEDIC CENTRE
RBL	WIRRAL UNIVERSITY TEACHING HOSPITAL NHS FOUNDATION TRUST
RBN	ST HELENS AND KNOWSLEY HOSPITALS NHS TRUST
RBQ	LIVERPOOL HEART AND CHEST NHS FOUNDATION TRUST
RBV	THE CHRISTIE NHS FOUNDATION TRUST
RBZ	NORTHERN DEVON HEALTHCARE NHS TRUST
RC3	EALING HOSPITAL NHS TRUST
RCB	YORK TEACHING HOSPITAL NHS FOUNDATION TRUST
RCC	SCARBOROUGH AND NORTH EAST YORKSHIRE HEALTH CARE NHS TRUST
RCD	HARROGATE AND DISTRICT NHS FOUNDATION TRUST
RCF	AIREDALE NHS FOUNDATION TRUST
RCX	THE QUEEN ELIZABETH HOSPITAL, KING'S LYNN, NHS FOUNDATION TRUST
RD1	ROYAL UNITED HOSPITAL BATH NHS TRUST
RD3	POOLE HOSPITAL NHS FOUNDATION TRUST
RD7	HEATHERWOOD AND WEXHAM PARK HOSPITALS NHS FOUNDATION TRUST
RDD	BASILDON AND THURROCK UNIVERSITY HOSPITALS NHS FOUNDATION TRUST
RDE	COLCHESTER HOSPITAL UNIVERSITY NHS FOUNDATION TRUST
RDU	FRIMLEY PARK HOSPITAL NHS FOUNDATION TRUST
RDZ	THE ROYAL BOURNEMOUTH AND CHRISTCHURCH HOSPITALS NHS FOUNDATION TRUST
RE9	SOUTH TYNESIDE NHS FOUNDATION TRUST
REF	ROYAL CORNWALL HOSPITALS

Control trusts *continued*

Code	Name
	NHS TRUST
REM	AINTREE UNIVERSITY HOSPITAL NHS FOUNDATION TRUST
REN	THE CLATTERBRIDGE CANCER CENTRE NHS FOUNDATION TRUST
RF4	BARKING, HAVERING AND REDBRIDGE UNIVERSITY HOSPITALS NHS TRUST
RFF	BARNSLEY HOSPITAL NHS FOUNDATION TRUST
RFR	THE ROTHERHAM NHS FOUNDATION TRUST
RFW	WEST MIDDLESEX UNIVERSITY HOSPITAL NHS TRUST
RG3	BROMLEY HOSPITALS NHS TRUST
RGC	WHIPPS CROSS UNIVERSITY HOSPITAL NHS TRUST
RGP	JAMES PAGET UNIVERSITY HOSPITALS NHS FOUNDATION TRUST
RGQ	IPSWICH HOSPITAL NHS TRUST
RGR	WEST SUFFOLK NHS FOUNDATION TRUST
RGT	CAMBRIDGE UNIVERSITY HOSPITALS NHS FOUNDATION TRUST
RH8	ROYAL DEVON AND EXETER NHS FOUNDATION TRUST
RHM	UNIVERSITY HOSPITAL SOUTHAMPTON NHS FOUNDATION TRUST
RHQ	SHEFFIELD TEACHING HOSPITALS NHS FOUNDATION TRUST
RHU	PORTSMOUTH HOSPITALS NHS TRUST
RJ1	GUY'S AND ST THOMAS' NHS FOUNDATION TRUST
RJ2	LEWISHAM HEALTHCARE NHS TRUST
RJ6	CROYDON HEALTH SERVICES NHS TRUST
RJ7	ST GEORGE'S HEALTHCARE NHS TRUST
RJC	SOUTH WARWICKSHIRE NHS FOUNDATION TRUST
RJL	NORTHERN LINCOLNSHIRE AND GOOLE HOSPITALS NHS FOUNDATION TRUST
RJR	COUNTESS OF CHESTER HOSPITAL NHS FOUNDATION TRUST
RJZ	KING'S COLLEGE HOSPITAL NHS FOUNDATION TRUST
RK9	PLYMOUTH HOSPITALS NHS TRUST

Code	Name
RKB	UNIVERSITY HOSPITALS COVENTRY AND WARWICKSHIRE NHS TRUST
RKE	THE WHITTINGTON HOSPITAL NHS TRUST
RL131	ROBERT JONES & AGNES HUNT ORTHOPAEDIC HOSPITAL
RLN	CITY HOSPITALS SUNDERLAND NHS FOUNDATION TRUST
RLT	GEORGE ELIOT HOSPITAL NHS TRUST
RM1	NORFOLK AND NORWICH UNIVERSITY HOSPITALS NHS FOUNDATION TRUST
RM2	UNIVERSITY HOSPITAL OF SOUTH MANCHESTER NHS FOUNDATION TRUST
RM3	SALFORD ROYAL NHS FOUNDATION TRUST
RM4	TRAFFORD HEALTHCARE NHS TRUST
RMC	BOLTON NHS FOUNDATION TRUST
RN1	WINCHESTER AND EASTLEIGH HEALTHCARE NHS TRUST
RN5	HAMPSHIRE HOSPITALS NHS FOUNDATION TRUST
RN7	DARTFORD AND GRAVESHAM NHS TRUST
RNH	NEWHAM UNIVERSITY HOSPITAL NHS TRUST
RNJ	BARTS AND THE LONDON NHS TRUST
RNL	NORTH CUMBRIA UNIVERSITY HOSPITALS NHS TRUST
RNQ	KETTERING GENERAL HOSPITAL NHS FOUNDATION TRUST
RNS	NORTHAMPTON GENERAL HOSPITAL NHS TRUST
RNZ	SALISBURY NHS FOUNDATION TRUST
RPA	MEDWAY NHS FOUNDATION TRUST
RPL	WORTHING AND SOUTHLANDS HOSPITALS NHS TRUST
RPY	THE ROYAL MARSDEN NHS FOUNDATION TRUST
RQ6	ROYAL LIVERPOOL AND BROADGREEN UNIVERSITY HOSPITALS NHS TRUST
RQ8	MID ESSEX HOSPITAL SERVICES NHS TRUST
RQM	CHELSEA AND WESTMINSTER HOSPITAL NHS FOUNDATION TRUST

Control trusts *continued*

Code	Name
RQQ	HINCHINGBROOKE HEALTH CARE NHS TRUST
RQW	THE PRINCESS ALEXANDRA HOSPITAL NHS TRUST
RQX	HOMERTON UNIVERSITY HOSPITAL NHS FOUNDATION TRUST
RR2	ISLE OF WIGHT HEALTHCARE NHS TRUST
RR7	GATESHEAD HEALTH NHS FOUNDATION TRUST
RR8	LEEDS TEACHING HOSPITALS NHS TRUST
RRF	WRIGHTINGTON, WIGAN AND LEIGH NHS FOUNDATION TRUST
RRJ	THE ROYAL ORTHOPAEDIC HOSPITAL NHS FOUNDATION TRUST
RRV	UNIVERSITY COLLEGE LONDON HOSPITALS NHS FOUNDATION TRUST
RT2	PENNINE CARE NHS FOUNDATION TRUST
RT3	ROYAL BROMPTON AND HAREFIELD NHS FOUNDATION TRUST
RTD	THE NEWCASTLE UPON TYNE HOSPITALS NHS FOUNDATION TRUST
RTF	NORTHUMBRIA HEALTHCARE NHS FOUNDATION TRUST
RTK	ASHFORD AND ST PETER'S HOSPITALS NHS FOUNDATION TRUST
RTP	SURREY AND SUSSEX HEALTHCARE NHS TRUST
RTR	SOUTH TEES HOSPITALS NHS FOUNDATION TRUST
RTX	UNIVERSITY HOSPITALS OF MORECAMBE BAY NHS FOUNDATION TRUST
RV3	CENTRAL AND NORTH WEST LONDON NHS FOUNDATION TRUST
RV8	NORTH WEST LONDON HOSPITALS NHS TRUST
RVJ	NORTH BRISTOL NHS TRUST
RVL	BARNET AND CHASE FARM HOSPITALS NHS TRUST
RVR	EPSOM AND ST HELIER UNIVERSITY HOSPITALS NHS TRUST
RVV	EAST KENT HOSPITALS UNIVERSITY NHS FOUNDATION TRUST
RVW	NORTH TEES AND HARTLEPOOL NHS FOUNDATION TRUST

Code	Name
RVY	SOUTHPORT AND ORMSKIRK HOSPITAL NHS TRUST
RW3	CENTRAL MANCHESTER UNIVERSITY HOSPITALS NHS FOUNDATION TRUST
RW6	PENNINE ACUTE HOSPITALS NHS TRUST
RWA	HULL AND EAST YORKSHIRE HOSPITALS NHS TRUST
RWD	UNITED LINCOLNSHIRE HOSPITALS NHS TRUST
RWF	MAIDSTONE AND TUNBRIDGE WELLS NHS TRUST
RWH	EAST AND NORTH HERTFORDSHIRE NHS TRUST
RWJ	STOCKPORT NHS FOUNDATION TRUST
RWW	WARRINGTON AND HALTON HOSPITALS NHS FOUNDATION TRUST
RWY	CALDERDALE AND HUDDERSFIELD NHS FOUNDATION TRUST
RXC	EAST SUSSEX HEALTHCARE NHS TRUST
RXF	MID YORKSHIRE HOSPITALS NHS TRUST
RXH	BRIGHTON AND SUSSEX UNIVERSITY HOSPITALS NHS TRUST
RXL	BLACKPOOL TEACHING HOSPITALS NHS FOUNDATION TRUST
RXN	LANCASHIRE TEACHING HOSPITALS NHS FOUNDATION TRUST
RXP	COUNTY DURHAM AND DARLINGTON NHS FOUNDATION TRUST
RXR	EAST LANCASHIRE HOSPITALS NHS TRUST
RYJ	IMPERIAL COLLEGE HEALTHCARE NHS TRUST
RYQ	SOUTH LONDON HEALTHCARE NHS TRUST
RYR	WESTERN SUSSEX HOSPITALS NHS TRUST
RYR16	ST RICHARD'S HOSPITAL
RYR18	WORTHING HOSPITAL