Early Lung Cancer Intervention in Doncaster (ELCID)

Abstract

Objective: To overcome the barriers to the early diagnosis of lung cancer by changing the health seeking behaviour of the public and by modifying the response of health services in targeted communities. To significantly increase the number of X-rays undertaken in the Doncaster area by 20% at the end of the campaign. In order to diagnose lung cancer earlier and thereby contribute to a reduction in inequalities in lung cancer mortality

Design: Social Marketing campaign based on **a** public awareness campaign that will focus on raising awareness of the symptoms of lung cancer and the benefits of early detection – Customer 'Push' and preparing health care professionals for the initiative in terms of sharing insights, training and capacity management in GP surgeries – Service 'Pull'

Setting: Six priority communities in Doncaster, United Kingdom.

Participants: 17,837 people living within the priority communities and 11 General Practices, March to April 2008.

Main outcome measures: Raised public awareness and intention, number of chest x ray referrals and stage of lung cancer diagnosis.

Results: Post campaign results showed an increased intention to act (visit their GP) if people had a bad cough from 93% to 97% and in addition the number of people who would visit their GP and ask for a chest x-ray increased from 64% to 76%. The campaign had a greater impact on smokers and ex-smokers than non-smokers. Chest x ray referrals increased by 9% in non-targeted practices and by 27% in targeted practices. There was a strong relationship between recall, shifts in attitudes and chest x rays. The stage of diagnosis changed pre and post campaign from 11% (stage I & II) to 19% (p<0.02).

Conclusion: A combined customer 'push' and service 'pull' campaign based on insight and segmentation can deliver a change in the health seeking behaviour of targeted communities and a change in service response that can increase the early diagnosis of lung cancer.

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Introduction

1.1 Lung cancer

Lung cancer is the most common cancer in the world with 1.3 million new cases diagnosed every year.[1] The vast majority of lung cancers are caused by cigarette smoking.

In the UK lung cancer is the second commonest cancer in men (after prostate cancer) and the third most common cancer in women (after breast and bowel) and is responsible for 1 in 7 of all cancers (37,700 cases a year).[2] Lung cancer is more common in men but whereas the rates of lung cancer in men have been falling the rates in women have continued to rise. The UK has one of the highest rates of female lung cancer in Europe.[3] Lung cancer is also associated with deprivation; in 1993 the incidence of lung cancer was almost 2.5 times higher in the most deprived male groups than the least deprived groups, with the difference for women 3 times higher.[4]

1.2 Lung cancer presentation and treatment

Patients present with a variety of symptoms usually relating to the primary tumour. These include dyspnoea (breathing difficulties), haemoptysis (coughing up blood) and chest pain. Loss of appetite, weight loss and general fatigue are also common. However, the presence of these symptoms already indicates established and possibly advanced disease.

The majority of lung cancers are Non-Small Cell Lung Cancer (NSCLC) and surgery is the main curative treatment. Early presentation and assessment for treatment is essential as there is a small window of opportunity where these patients can be offered curative treatment. Only 20-30% of patients may be eligible for radical surgery,[5] yet in England less than half of these people underwent surgery (between 7 and 17% of patients diagnosed in 2000 had surgery for NSCLC[6]). Five year survival rates for people with stage I (early disease) and treated with radical surgery are over 60% and can be as high as 80% for very early squamous cell carcinomas.[7]

Some types of presentation are associated with a good prognosis, these include coincidental discovery, presentation with 'chest infection' and presentation with cough.[8]

1.3 Delays in Diagnosis

An urgent Chest X Ray (CXR) is the required initial investigation for symptoms suggestive of lung cancer.[9] However there is some concern that people do not have CXRs as often as might be clinically indicated. This is complicated by primary care clinicians feeling that they should not refer too many people for CXR following campaigns to reduce X-Ray use, and also the fact that in a population with very high levels of chest disease they could easily swamp the local radiology department with extra referrals.

The current NICE guidance also appears to focus on relatively late symptoms including haemoptysis, pain, weight loss, hoarseness, finger clubbing, lymphadenopathy and features of metastasis.

2.0 Local Problem

Doncaster has higher rates of lung cancer incidence and mortality than the national average; the indirectly standardised registration rate (2001-03) for Doncaster was 139 (95% CI 129-149)[10] with a Standardised Mortality Ratio (SMR) for Doncaster from lung cancer in 2004 of 134.[11] So lung cancer incidence is 39% more common than nationally and mortality rates are 34% higher. Lung cancer survival rates reflect the national picture with only 25% of people diagnosed with lung cancer alive at one year and 7% at five years. The high mortality rate from lung cancer is a contributory factor to Doncaster's Spearhead status and the impact of lung cancer is a key driver of health inequalities in Doncaster.

Local research included an audit and qualitative interviews with patients to describe the problem in more detail. An audit of CXR use in the local hospital (Doncaster Royal Infirmary (DRI)) showed that individuals diagnosed with lung cancer had not had CXRs for a substantial period of time before diagnosis. In fact 65% of patients had not a single chest X-ray in the 6-10 years prior to diagnosis. This may be evidence that people presented late to the respiratory physicians.[12]

Qualitative research with survivors of lung cancer was carried out and highlighted a number of barriers that people experienced or perceived in their cancer journeys.[13] Reasons for the delay in diagnosing lung cancer from a patient perspective included the nature of symptoms people experienced, a mismatch between expectation and experience of symptoms, lack of awareness of symptoms and their initial response to the symptoms.
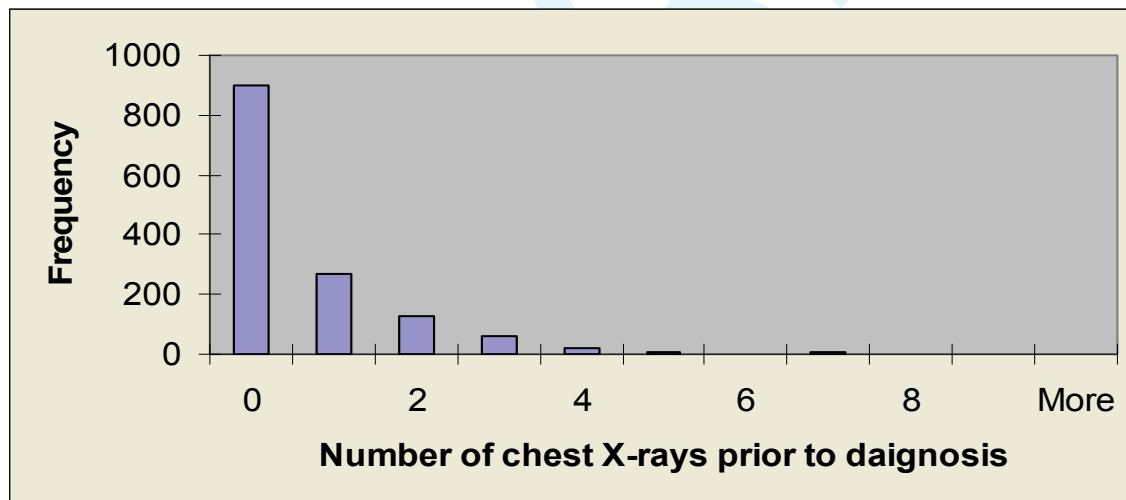

Figure 1 Chest x ray audit

3.0 Intended Improvement

The overall PCT vision aims to 'promote public health and reduce health inequalities: through prevention, investment, partnerships and the commissioning of high quality, accessible services'. The PCT vision is reflected in the 'Achieving Early Impact Programme' which focuses on initiatives which will have the greatest impact on improving the local life expectancy and particularly targets the most disadvantaged 20% of Doncaster's population. A social marketing scheme focusing on early diagnosis of lung cancer amongst the most deprived areas of Doncaster is therefore aligned with both of the objectives of promoting health *and* reducing inequalities.

The project objectives were:

- To significantly increase the number of people with potential symptoms presenting at specific GP surgeries within the designated priority areas.

- To significantly increase the number of X-rays undertaken in the Doncaster area by 20% at the end of the campaign.

This would be achieved through two complementary approaches:

- A public awareness campaign that will focus on raising awareness of the symptoms of lung cancer and the benefits of early detection – Customer 'Push'

- Preparing health care professionals for the initiative in terms of sharing insights, training and capacity management in GP surgeries – Service 'Pull'

To be effective the project needed to continue to draw on the insights from social marketing methodology, as well as demonstrating sustainability and being scalable. In particular the project needed to

Exploit:

- Learning from the previous 'pilot'
- Our detailed understanding of 'customer' attitudes and behaviours from qualitative research
- Opportunities for a more sophisticated media & PR approach

Overcome:

- Lack of awareness of the symptoms and strong negative associations with the condition
- 'Screening out' of lung cancer messages when confused with Stop Smoking messages
- Any resistance from GPs on impact on 'demand'
- Potential capacity issues in radiology departments

4.0 Working and Governance

The initial work for this intervention was undertaken by a steering group including public health, GP, clinical respiratory disease expertise and a researcher. This was subsequently endorsed and governed through the Doncaster & Bassetlaw cancer strategy partnership.

NHS Yorkshire and Humber then embarked upon a programme of health improvement interventions in the region, utilising social marketing 'best practice'. The early detection of lung cancer (EDLC) project is just one initiative within this programme.

The initiative is focussed on early detection and therefore does *not* address issues of smoking prevention.

5.0 Study question

Can insight led commissioning using social marketing principles increase the number of people diagnosed early with lung cancer?

5.1 Project Aim

- To improve life expectancy and reduce health inequalities in the Doncaster area by focusing on the early identification of lung cancer within the most disadvantaged areas.

5.2 Project Objectives

- To raise awareness of the early symptoms of lung cancer – specifically a cough that lasts more than three weeks.
- To change the target audiences behaviour and significantly increase the number of people with potential symptoms presenting at the prioritised GPs surgeries.
- To increase the number of chest X-rays undertaken in Doncaster by 20% post campaign.
- To increase the number of people diagnosed with Stage I or II lung cancer i.e. early diagnosis.

5.3 Timescale

Project Development:	Nov 07 – Feb 08
Project Execution:	Mar 08 – Apr 08
Project Evaluation:	May 08 – Jul 08

Methods

6.0 Settings

Doncaster is the largest metropolitan borough in the country and is the 40th most deprived Local Authority (2004). It has a resident population of 290,000, but the registered population is 305,000. It is predominantly white (97.7%) however recently there have been changes and other important populations present in Doncaster include: approximately 600 asylum seekers, 4,000-6,000 gypsy/travellers, and around 2,800 prisoners. Over 41% of residents live in the nationally most deprived fifth. 21,000 people receive incapacity benefit.

Doncaster in common with most of England & Wales is expected to have in increasingly elderly population. By 2012 the numbers of 0-19 year olds will have declined from 71,500 in 2006 to 68,600 a fall of almost 4,000. In the same period the number over 65 will have increased from 48,500 to around 54,000 an increase of more than 5,000.

Life expectancy is lower for both men and women with mortality from cancer smoking and heart disease significantly above the national average.

The Primary Care Trust is co-terminous with the Local Authority and is served by 44 General Practices and one major acute hospital (Doncaster Royal infirmary).

Figure 2 Doncaster Wards and Settlements

7.0 Planning the Intervention

7.1 Project Justification

- The overall PCT vision is to promote public health and reduce health inequalities: through the prevention, investment, partnerships and the commissioning of high quality, accessible services.

- Compared to the rest of the country, Doncaster has significantly higher death rates of most cancers and chronic lung disease (compromising public health), particularly amongst the most disadvantaged people in Doncaster (driving inequalities).

- The PCT vision is reflected in the 'Achieving Early Impact Programme'. This focuses on initiatives which will have the greatest impact on improving the local life expectancy and particularly targets the most disadvantaged 20% of Doncaster's population.

- Focusing on early diagnosis of lung cancer amongst the most deprived areas of Doncaster is therefore aligned with both of the objectives of promoting health *and* reducing inequalities.
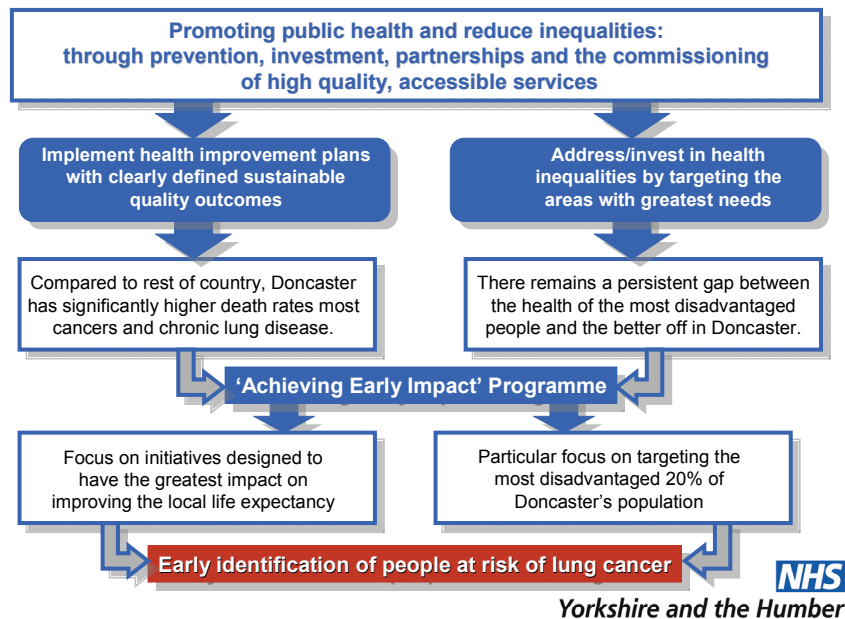
Project Cascade from PCT Vision

Figure 3 Project Justification

7.2 Consumer planning/data planning/Segmentation of the Audience

The consumer planning was carried out in partnership with local experts (Journey) and the Yorkshire & Humber Public Health Observatory (YHPHO). Key steps in the methodology were

1. Identify data of known lung cancer sufferers in Doncaster region. This will include deaths and admissions.
2. Profile this data based on the variable contained within it. This should include sex, age etc.
3. Run this data against a variety of geodemographic classifications to see if this further enhances the profiles.
4. Where possible compare any profiles against local, regional and nation population

Basic Profile
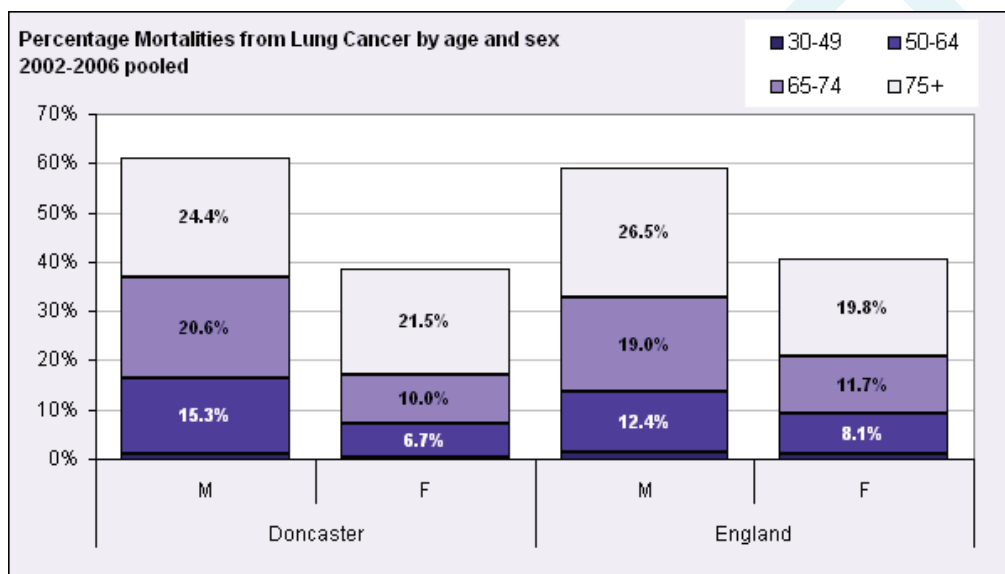
Figure 4 Percentage mortalities from lung cancer by age and sex

The key variables from the file of lung cancers deaths in the Doncaster area are age and sex. This information shows that 98.6% of all lung cancer deaths come from people aged over 50 years.
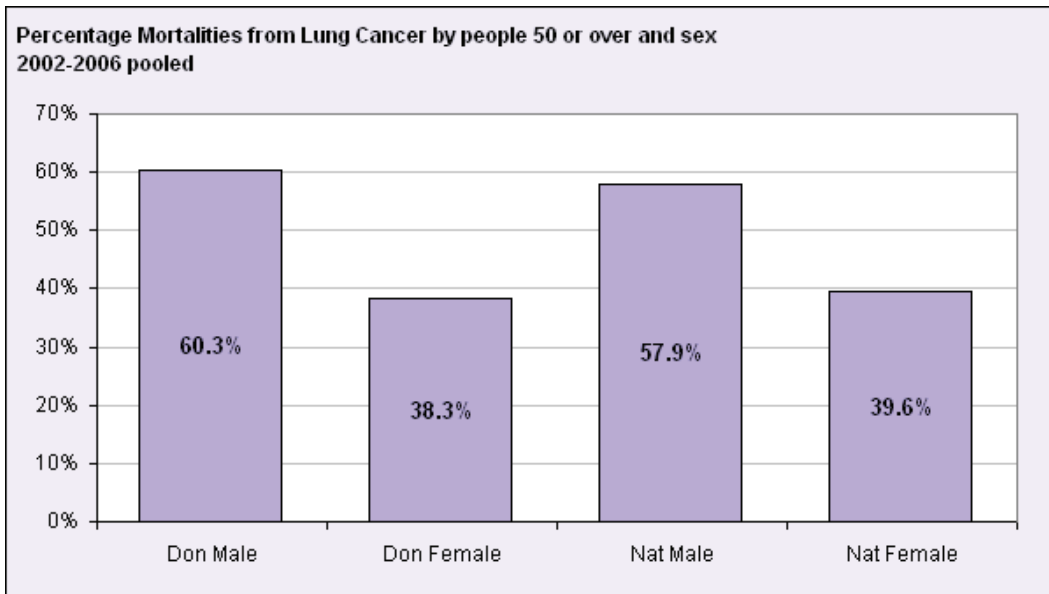
Figure 5 Percentage mortalities lung cancer over 50 and by sex

In addition, there is a male dominance of lung cancer deaths with roughly a 60:40 male/female split. So from this information we can deduce the primary target audience to be males 50+ with a secondary target audience of females 50+.

This profile is broadly in line with the national picture and is in keeping with the target audience projection that was used for the mini-pilot undertaken in the Carcroft area.

The picture for admissions is very much in line with that of deaths.
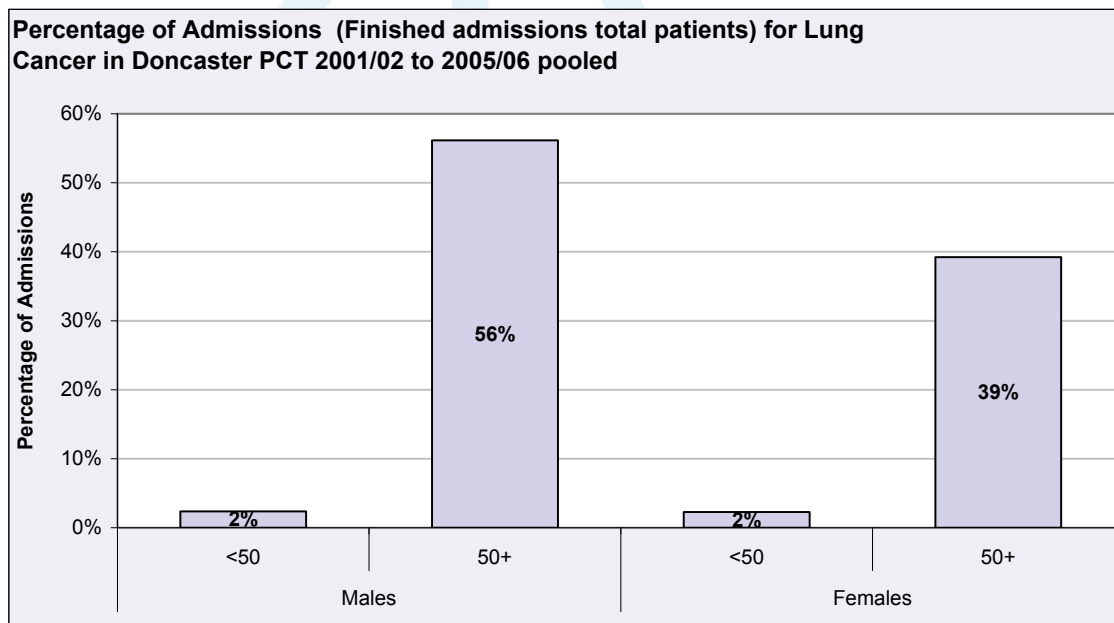
Figure 6 percentage admissions lung cancer

Taking Males 50+ we have mapped Lung Cancer Admissions against a map of Deprivation for Doncaster. From this map it is clear that the majority of lung cancer sufferers reside in areas of deprivation, although there are clearly pockets that do not follow this pattern.

Figure 7 Map of patient admissions for lung cancer
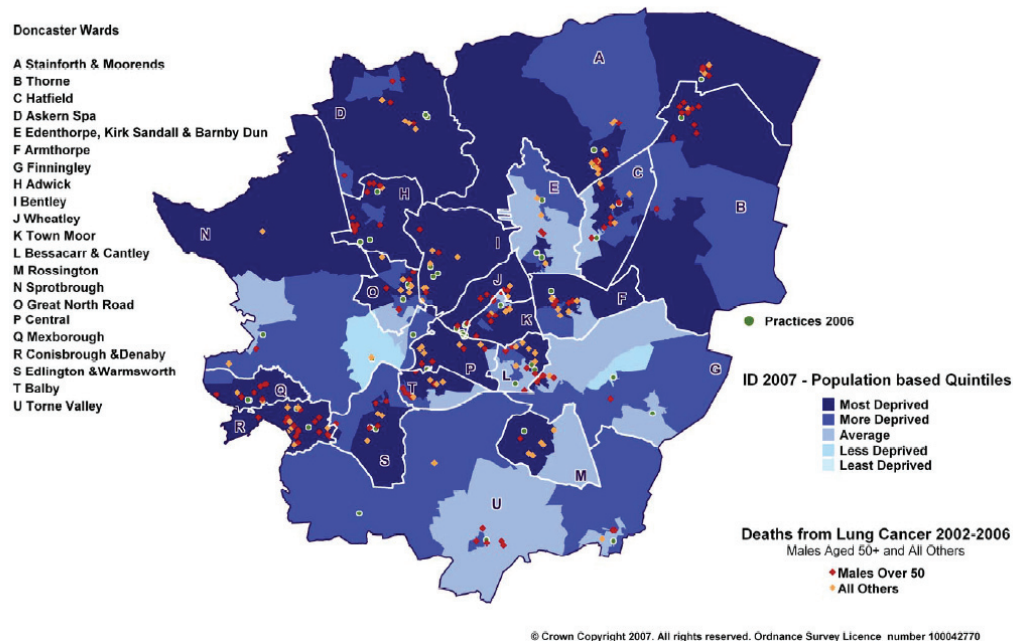
Figure 8 Map of patient mortalities for lung cancer

Male 50+ Geo-demographic Profile

A variety of geo-demographic classifications were applied to the Male 50+ data to see if the profile can be enriched. Five classification systems were used – Health Acorn, Acorn, PersonicxGeo, P2 & OAC. These classifications have been explored at Group, type and sub-type level in an attempt to identify distinct target groups. Of all the classifications PersonicxGeo appears to provide the most accurate system for locating our target with the largest % of lung cancer sufferers 50 + from deprived areas falling into a single grouping - GR5 (Retired – Low Income).

The use of geo-demographics did not in this instance provide a clear cut enhancement to the core target audience. It is possible with this classification to explore customer insight by linking to market research studies through Personicx coding of TGI Choices.

PersonicxGeo
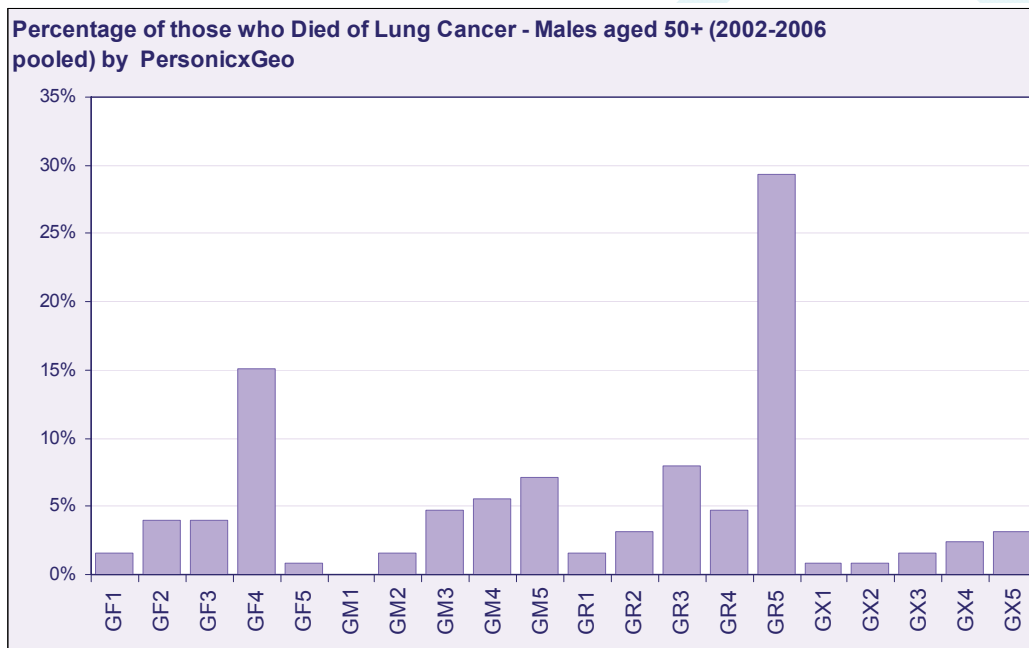
Figure 9 Personicx Geo of lung caner deaths

Group GR5 (Retired – Low Income) is clearly the most populated group representing 30% of the file.

GR5 Includes: Aged in the City Suburbs, Betting and Bingo, Budget Conscious Pensioners, Pastoral Volunteers, Small Town Bungalows, Widowed and Retired

The target audience was identified using segmentation techniques including analysis of geo-demographics of the most deprived Doncaster areas, overlaid with the highest 'at-risk' areas which demonstrated high incidence of lung cancer. Geo-demographic profiling of the high risk groups by the Yorkshire & Humber Public Health Observatory (YHPHO) used the software package P2: People and Places. This indicated a strong bias towards 'Weathered Communities'.
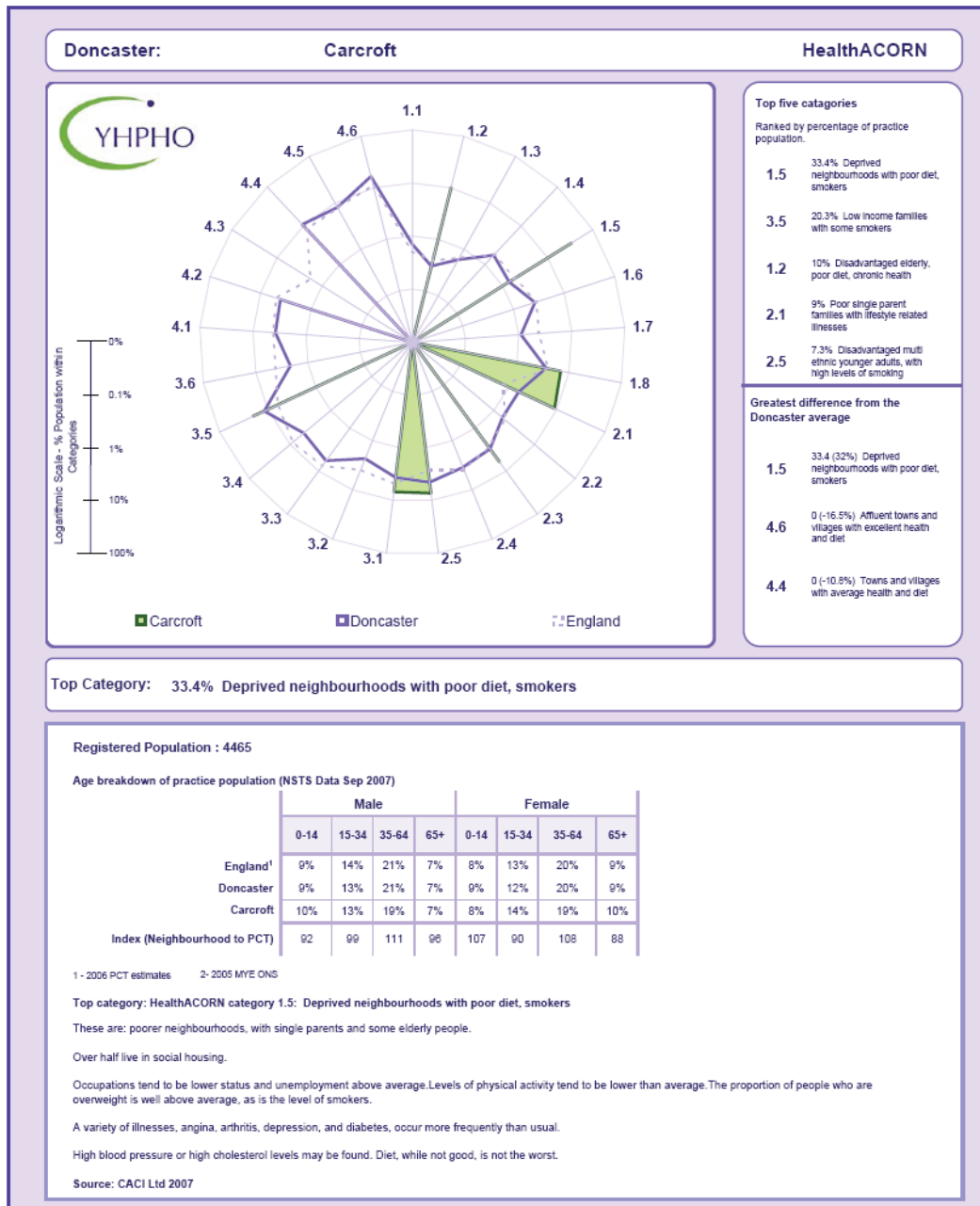
Figure 10 Neighbourhood HealthACORN profile

7.3   Development of Campaign

The project formed partnerships with advertising and media agencies to design and develop the awareness campaign which would target this audience. The insights that came from the segmentation process were crucial here. The awareness campaign approach combined elements of traditional advertising and also a strong PR element in order to attract the attention of both audiences.

In addition the insights this approach provided into segmentation were kept at the core of the communications brief, and were particularly useful in informing the media buying. The depth of insight meant that media planning could ensure we utilised the most appropriate media to reach the target audience.

7.4 Social Marketing Strategy

7.4.1 Background

- The levels of lung cancer prevalent in South Yorkshire communities in areas of social disadvantage are particularly high.

- Early diagnosis improves prognosis and is therefore a priority. It is envisaged that encouraging members of the public to seek early detection, diagnosis and treatment will impact on mortality rates and quality of life.

- A previous mini-pilot was undertaken in the Carcroft area. This indicated that a social marketing approach would be advantageous in driving awareness of symptoms and developed initiatives which will be built on further in this phase.

- Qualitative research undertaken in the pilot phase was useful in highlighting consumer attitudes and behaviours around the broader issue of lung cancer and also issues which impacted on their likelihood to present early which can form the basis of a social marketing strategy.[14]

Figure 11 Qualitative insights

7.4.2   Key Health Insights

Primary Insight

- The most fundamental issue that needs to be addressed is the general lack of awareness around the symptoms
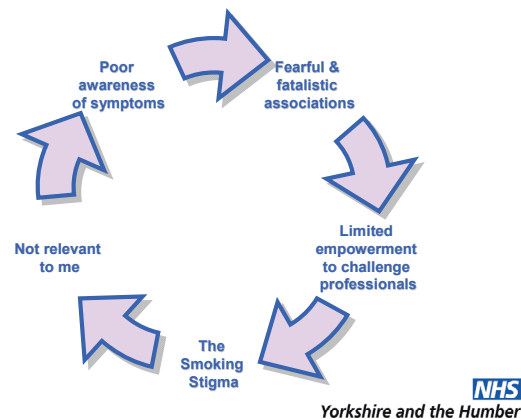
- The second key issue is the lack of understanding about the benefits of getting an early diagnosis and how this improves the prognosis.

Other Relevant Insights

Audience

- The role of raising awareness will be relevant to a broader audience than just the 'at risk' group themselves. The role of the community and family proximity in these neighbourhoods suggests that broader awareness raising will provide leverage to encourage other family members to present earlier at GPs

- There are considerable fatalistic attitudes and fear around lung cancer as it is not a disease associated with a positive outcome or linked to positive role models.

- Messages highlighting issues with Lung cancer can often be either subsumed in a Stop Smoking message, or can be misconstrued as being Stop Smoking messages. Smokers are highly adept at 'screening out' stop smoking advertising.

- At risk groups can perceive there to be a considerable social and educational differential between themselves and healthcare professionals that means that they do not feel able to challenge professionals where they are not getting chest X-rays etc.

- Older males in particular, who are a key potential target, tend to be more stoical about their health and reticent about presenting at GPs.

- The small geographical area for the pilot phase meant that delivering a broad and impactful communication approach was limited. A wider roll-out will permit more media analysis and sophistication in communication strategy (creative solutions which can translate across different media routes relevant to the audience)

Service

- To ensure no 'bottlenecks' in capacity - radiology departments will need to forecast and anticipate an uplift in 'demand' for chest X-rays. GPs will need to be made aware of this additional capacity so they do not have concerns about overloading radiologists

- There may be an increase in demand for GPs time, as more people may present themselves based on the awareness driving campaign.

7.5 Overall Strategic Approach

There are two critical angles to the strategy. It is essential to drive awareness to ensure increased presentation at GPs, but this then needs to translate into a better health outcome by ensuring that they successful enter the service and benefit from an early diagnosis. These are characterised as customer 'push' and service 'pull'.

Two Key Intervention Drivers
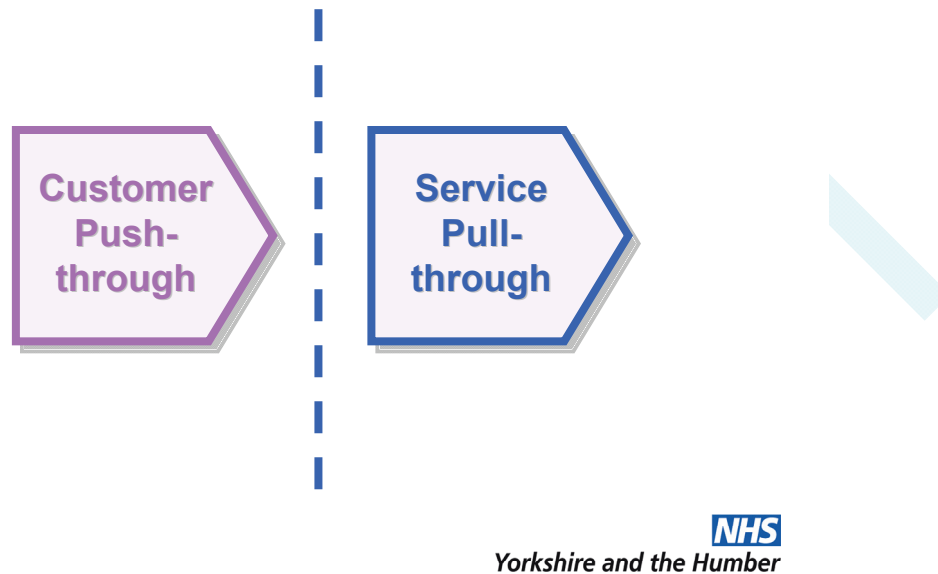
Figure 12 Key Intervention Drivers

7.5.1 Customer 'Push'

Awareness Raising

- A public awareness campaign was designed to focus on the benefits of early detection of lung cancer and how it could make a real difference to the health outcome of the affected population. This approach combined elements of traditional advertising and also a strong PR element.

- Spontaneous awareness of signs and symptoms of lung cancer within the population of Doncaster (C2, D, E target groups) was raised.

- Geographical locations – and therefore the relevant GP surgeries – were determined by postcode level analysis.

- Earlier and appropriate presentation of lung cancer was promoted within the Doncaster area by communicating the benefits of early diagnosis

Segmentation of Audiences

- The segmentation of the most deprived areas informed media planning. Broadly speaking, the audience included:

  - People residing in the priority areas of the Doncaster – including over 50's, smokers, people who have worked in heavy industry

  - Secondary target: families of the above

- The broader targets were:

  - Community networks

  - Those working with communities

  - The media – local and regional

Creative Guidance

Key message:

If you have a persistent cough that lasts for over 3 weeks ask your GP about a chest x-ray. Acting quickly is critical.

- Tonally this communication needed to be clear and encouraging in order to address the fatalistic attitude of many people who believe that lung cancer leads to death. It also needed to ensure that there is minimal specific reference to cancer (which could paralyse) but enough gravitas to give conviction to those who may need to push GPs.

- Messages provided reassurance that early detection is something that can be offered easily through a simple x-ray referral and that by getting symptoms checked out individuals can eliminate fear/worry and be referred to necessary services if required.

- In many instances the target was likely to be families and friends of people who show symptoms that may be of concern to them, such as persistent cough, tiredness, etc. They can help their loved ones by encouraging them to ask for a chest x-ray

- Smoking references were avoided. These are too easily screened out by smokers. Just because you do not smoke (or are an ex-smoker), does not mean that you are not at risk from lung cancer.

Empowering Patients

- One insight gained form the qualitative research is that this target audience can often feel a significant social and educational gap between themselves and their healthcare professionals.

- This can impact on their sense of empowerment to challenge healthcare professionals (and GPs in particular), or to request a specific treatment when this is not spontaneously suggested.

- In this instance we are encouraging the audience to request a chest X- ray from their GP if they are concerned about their symptoms or persistent cough. Where possible, there should be tools or facilitators provided which can be used by patients as a short-cut to reflect their concerns.

- The pilot test used credit card style leaflets encouraging those concerned to speak to their GPs and also prescription-style pads with a chest X-ray request completed.

7.5.2 **Service 'Pull'**

To make best use of the 'customer' awareness raising initiative and to ensure that as customers are encouraged into the service for early diagnosis, the service was prepared both in terms of training and capacity within GP practices and radiology departments. There was co-ordination linking primary care and secondary care staff to promote the campaign and encourage referral to chest x-ray service in the Doncaster area.

Capacity

- GPs in the targeted areas of Doncaster were fully informed and prepared for the initiative.

- The likely concern amongst GPs that there may be an increase in presentations/ appointments into GP practices was managed through practice visits and reassurance from the pilot campaign.

- The likely impact on demand for chest X-rays was modelled and the radiology department was prepared for the uplift in chest X-rays. Additional resources were identified for the predicted increased activity.

Raising awareness amongst Healthcare professionals

- Health professionals/workers have an important role to play in encouraging people to go for/ask for a chest x-ray. Training of local professionals within the prioritised areas of Doncaster on the symptoms and insights around lung cancer and early diagnosis took place using the brief intervention materials. This included sharing the main the insights and issues around lung cancer and early presentation obtained from the qualitative research.

- Links were made with defined local pharmacies to promote x-ray referral to individuals purchasing OTC medicines. Local pharmacists were seen as more accessible/

approachable than healthcare professionals and could be an important initial point of contact and encouragement.

- The initial points of contact with the service (pharmacists, receptionists, practice nurses etc) were able to clarify the role of staff within primary care and explain the process that will take place if a patient is referred for x-ray.   These were also prime locations for the distribution of materials so it was important that they were aligned.

8.0   Resulting Campaign

The campaign consisted of a targeted push and pull campaigns. The areas of Doncaster that have a high deprivation and high risk of lung cancer were identified and from those, 6 priority communities were identified, served by a total of 11 GP surgeries. The campaign was targeted at the type of people living in the priority areas however some aspects of the media campaign would spread across Doncaster including local media and some of the PR activity. GP surgeries in the priority areas were given significant support from the PCT. The target group for the campaign and evaluation are C2DE who are either: 50+ or; smokers or; people who have worked in heavy industry.

The insights from the initial research and the geo-demographic profiling allowed for extremely targeted media (see Appendix). This included an integrated mix of media including local press, appropriate bus routes, beer mats in working men's clubs and pubs, and pharmacy bags. A uniquely impactful campaign was enhanced by 'coughing' bus shelters, where sound chips coughed repeatedly to draw attention to the creative message.

The training materials for GPs were also re-designed to reflect the refreshed creative idea & form an integrated part of the campaign.

	Hyde Park	Highfields	Denaby main	Stainforth	Clay Lane	Toll Bar	Doncaster
Population	3,928	1,225	4,210	6,479	918	1,077	289,828
Classification of household deprivation	39.4% (rank 7 of 88)	42.2% (rank 3 of 88)	43.8% (rank 1 of 88)	41.4% (rank 4 of 88)	42.6% (rank 2 of 88)	38.4% (rank 9 of 88)	
Male life expectancy at birth	69.9 (68.1, 71.6)	75.4 (74.2, 76.6)	71.2 (70.6, 71.8)	72.0 (70.7, 73.3)	75.9 (74.6, 77.2)	77.2 (76.1, 78.3)	75.1
Female Life Expectancy at birth	79.1 (77.5, 80.7)	82.9 (81.6, 84.1)	75.4 (74.1, 76.7)	76.3 (75.9, 76.7)		79.4 (78.3, 80.5)	79.9
All cause mortality (deaths)	89 (+88%)	17 (-2%)	141 (+72%)	180 (+47%)	11 (-8%)	22 (+23%)	% relative to Doncaster
All cancers mortality (deaths)	27 (+56%)	6 (-5%)	47 (+48%)	72 (+53%)	5 (+7%)	6 (-13%)	% relative to Doncaster
Lung cancer mortality (deaths)	11 (+143%)	<5	18 (+112%)	22 (+75%)	<5	<5	% relative to Doncaster

Figure 13 characteristics of priority neighbourhoods
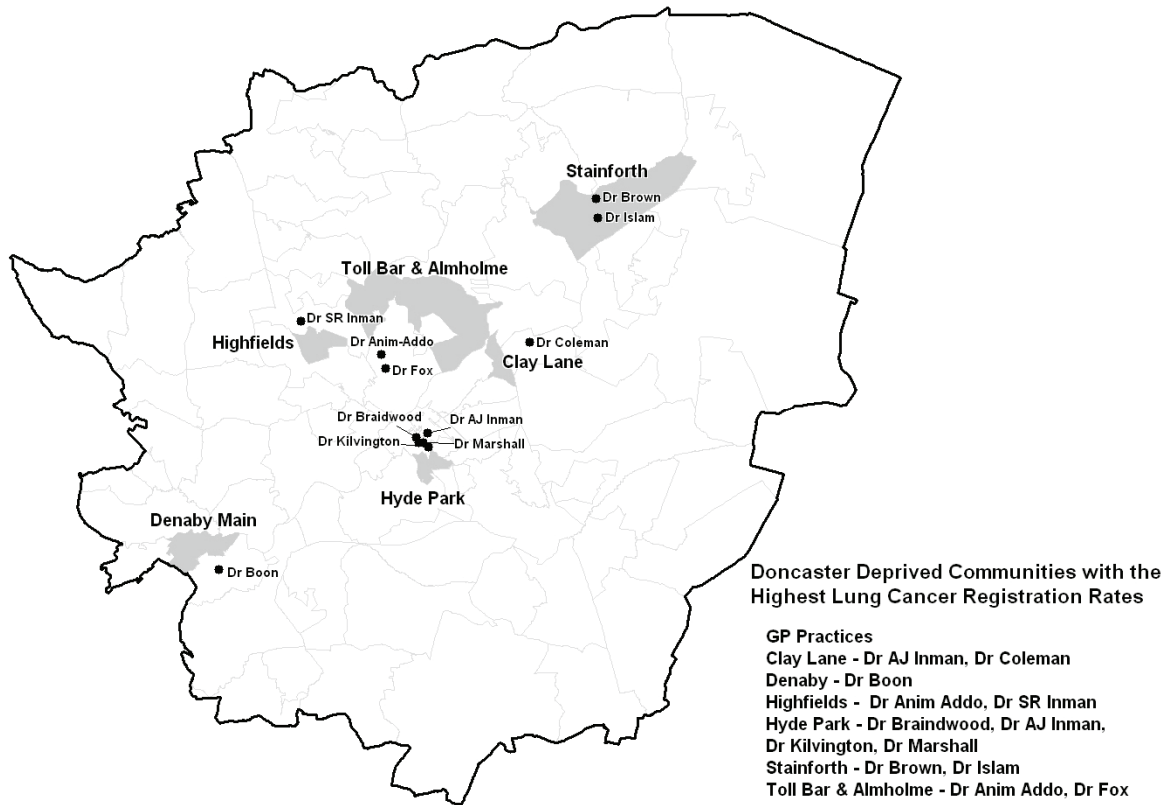
Figure 14 Map of priority neighbourhoods and their GPs

The primary target was people residing in these priority areas – including over 50's, smokers, and people who have worked in heavy industry. However, it was found that these people tend to hold a stoical attitude towards their own health. Instead the main drive to take action often came from the families of those affected. Therefore the public awareness campaign needed to be relevant to this secondary audience as well.

Examples of the creative execution can be seen in the attached Appendix.

Push Campaign

Outputs for the push Campaign included the production of creative and core media and PR approaches all of which were delivered on time.

Pull Campaign

For the Pull campaign brief intervention materials were rewritten to include the updated creative. All 11 prioritised GP surgeries were visited and training was given on the campaign including the brief intervention materials.

Title	Inserts	March					April				May			
		3	10	17	24	31	7	14	21	28	5	12	19	26
Core Media														
Local Press - Doncaster Free Press, Doncaster Advertiser and Thorne Gazette - (1/2 Page Clr) - SPORT	2				27				24					
Local Press - Doncaster Free Press, Doncaster Advertiser and Thorne Gazette - (1/2 Page Clr) - ENTERTAINMENT	2						10				8			
Radio - Trax FM (Spot Airtime) (4 OTH)	4				24/3/2008 - 20/4/208									
Outdoor - 48 sheets (5 sites)	1				X									
Buses - Streetliners (38 streetliners)	1				31/3/2008-27/4/2008									
Outdoor - Bus Shelters (10 sites)	1				X									
Production on Soundchips for Bus Shelters (4 chips)	1				X									
Outdoor - Ad Van (Launch Date)	1			19										
Pharmacy Bags (12 pharmacies - 30,000 pharmacy bags) inc production	1					1/4/2008 - 31/5/2008								
Leaflets (30,000 Hand Inserted)	1					1/4/2008 - 31/5/2009								
Beer mats (50 Traditional Pubs and Working Mens Clubs, 50,000 mats) - inc production	1					1/4/2008 - 30/4/2008								

Figure 15 Planning matrix for core media

Evaluation

9.1 Framework

Accurate measurement of the change in behaviour demonstrated by the target audience was important to this project, as evidence of success in the Doncaster area would facilitate a wider roll-out. The structure of this evaluation is based around the key message:

If you have a persistent cough that lasts for over 3 weeks ask your GP about a chest X-ray. Acting quickly is critical.

From this single statement the framework of assessment that can be broken down into 2 key measures and four distinct areas: reach; changing attitudes; response; and service.

Key measure 1 - Likelihood of visiting GP if had a cough for 3+ weeks – pre and post

Other measures

- *Likelihood of making partner/other family member visit GP if had cough for 3+ weeks – pre and post*
- *Awareness of lung cancer symptoms – pre and post*
- *Comparison of above measures across sampling communities*
- *Awareness/recall of different elements of campaign*

Key measure 2 - Numbers presenting at GP with symptoms of lung cancer - comparative measure with previous year

Other measures

- *Numbers asking GP for chest X-ray*
- *Number of chest X-rays being carried out – comparative measure with previous year*

9.2 Reach

This involves measuring the success of the targeting, the coverage of the campaign area and public awareness of the campaign.

Measured through:
- Amount of coverage in target media
- Numbers of leaflets, prescriptions, credit cards etc being taken from access points indicating which material from menu of campaign materials was most successful
- Response to specific media activities (e.g. phone-ins, micro site)
- Awareness and penetration of campaign across target communities (from survey in pilot areas)

9.3 Changing Attitudes

This involves measuring the effectiveness of the campaign in increasing likelihood of the target group presenting at GP if they have had a cough for 3 weeks or more, and also likelihood of proactively asking for a chest X-ray.

Measured through:
- Changes between pre campaign (benchmarking) survey and post campaign survey of target.

9.4 Response
This focuses on ascertaining how effective the campaign was at getting the target patients showing symptoms of lung cancer to visit their GP and visit and ask for an X-ray.

Measured through:
- Uptake of X-ray from pilot area referrals compared to historic figures and similar non-pilot areas.
- Numbers presenting at GPs with concerns about persistent coughs/ requesting X-ray compared to historic figures and similar non-pilot areas.
- Feedback from trained practitioners regarding uptake of campaign information and behaviour change of patients/contacts.

9.5 Service

This area focused on how well the GP surgeries were prepared for the campaign, and what the experience of the target group patients was when they visited their GP.

9.6 Telephone survey (Pre and Post Campaign)

Location	Number of interviews	
	Pre Campaign (Benchmark)	Post Campaign
Stainforth	100	100
Toll Bar & Anholme	100	100
Highfields	100	100
Clay Lane	100	100
Hyde Park	100	100
Denaby Main	100	100
Matched Community TBC	200	200
Total	**800**	**800**

Figure 16 Proposed Telephone interview schedule

The 600 interviews in the prioritised communities gave us a margin of error (confidence interval) of no more than +/-4% for each of our two data sets (pre and post). This will gave a sufficiently robust base to make statistical comparisons between the two.
The 100 interviews in each of the priority areas will allow us to make some inter-community comparisons with respect to the campaign penetration.
The second sample was matched to the first using demographic variables to maximise the accuracy of the pre: post stage comparisons.

Interviews were with our target audience. C2DE who are either: 50+ or; smokers or; people who have worked/work in heavy industry. Both men and women with a slight bias towards men as they are more prevalent in the target audience were interviewed.

The matched community represents all other areas of high depravation/high lung cancer rates. Interviewing these people allows us to isolate the contribution being made by the GP support. We are recommending 200 interviews on the basis that it makes our analysis more robust.

9.7 Collection of hard data

Doncaster PCT commissioned the Buzz to undertake the pre- and post-campaign telephone interviews and to undertake the data analysis.

10.0 Results

Telephone interviews (pre and post campaign) with our target audience: C2DE over 50 and living in the target postcodes. Both men and women were interviewed with a slight bias towards men who were the primary focus of the campaign

The control community did have some exposure to the broader aspects of the campaign although not the full mix. It was selected for it's similarities to the pilot communities. Being able to compare data from the pilot areas with that from the control area gives us greater confidence when assigning any changes in attitudes to the campaign.

The data from the post campaign interviews was matched to the first using demographic variables to maximise the accuracy of our pre: post stage comparisons. Pre campaign survey: 18 March – 27 March and Post campaign survey: 19 May – 6 June.

Location	Number of interviews	
	Pre Campaign (Benchmark)	Post Campaign
Stainforth	146	108
Toll Bar & Anholme	81	96
Highfields	63	85
Clay Lane	78	89
Hyde Park	118	146
Denaby Main	116	102
Control Community (DN8 4)	199	200

Figure 17 Actual telephone interview schedule

10.1 Likelihood of visiting GP with a 'Bad' cough

Prior to the campaign 93% of people said they would visit the GP if they had a 'bad' cough. Following the intervention this increased to 97%. In addition whereas 64% of people said they would ask for an x-ray when visiting the GP with a 'bad' cough this increased to 76% following the intervention. There was no significant difference between men and women.
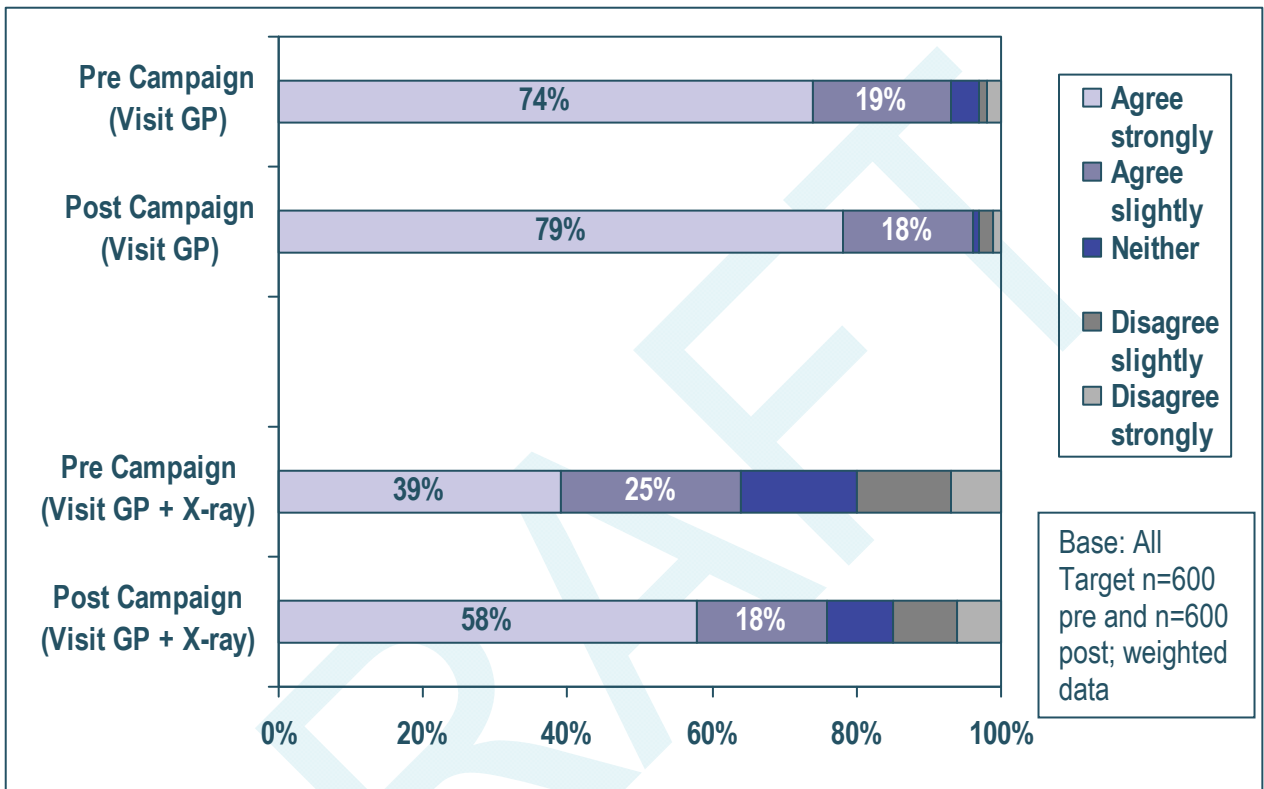

Figure 18 Likelihood of visiting GP with a 'bad' cough

STATISTICALLY SIGNIFICANT INCREASES IN OUR TARGETS LIKELIHOOD TO VISIT THEIR GP (AND ASK FOR AN X-RAY) IF THEY HAVE A 'REALLY BAD' COUGH. KEY MESSAGES EFFECTIVELY COMMUNICATED ACROSS BOTH MEN AND WOMEN

10.2 Length of Time would leave a cough before visiting the GP

Overall there was no significant change in the length of time people would leave before visiting their GP if they had a 'bad' cough. Two groups of people are displayed: our target (as a whole) and the more 'fatalistic' people within our target. This 'fatalistic' section (labelled 'avoid GP) consists of the people who agreed with the following statement in the survey:

'I avoid visiting my GP in case they give me bad news'

The percentage of the 'fatalistic' group who would see their GP within 2 weeks increased from 43% to 59%. The proportion **very concerned** with having a 3 week cough, amongst those who tend to avoid their GP, also rose from **28%** to **59%**
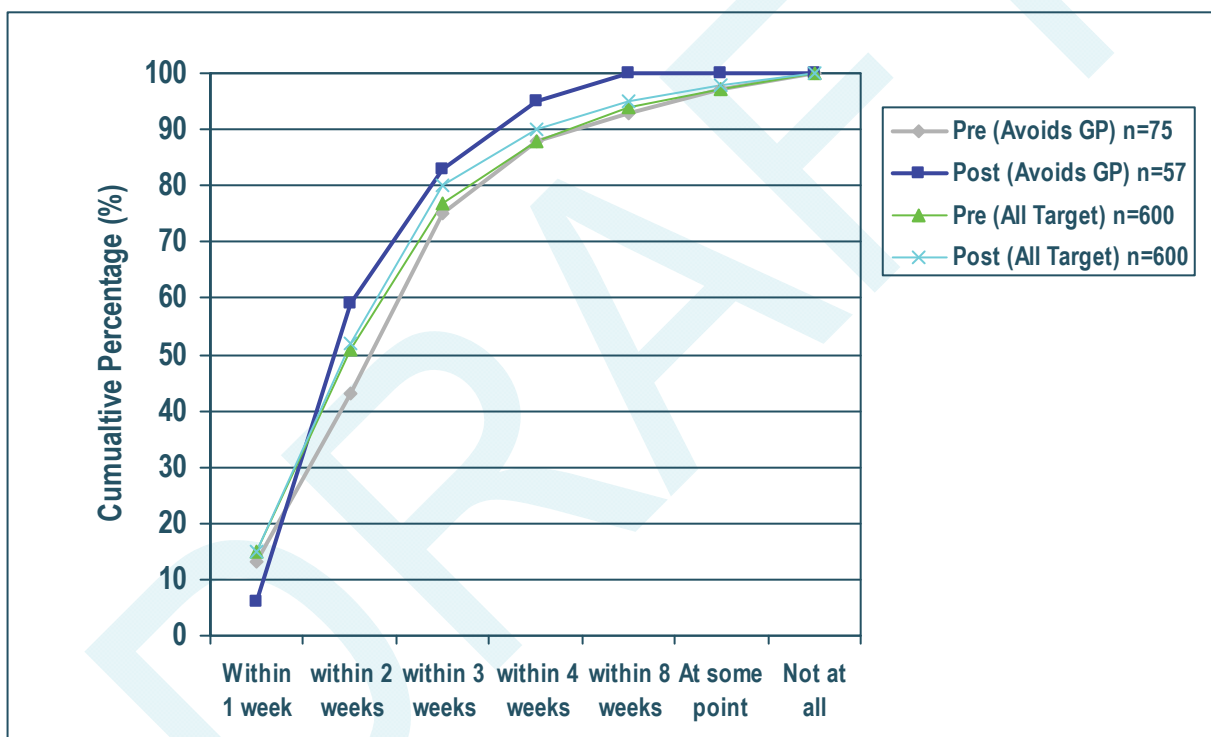

Figure 19 Length of time people would leave a cough before visiting their GP

NO CHANGE WAS OBSERVED IN OUR OVERALL TARGET WITH RESPECT TO LENGTH OF TIME WOULD LEAVE A COUGH BEFORE CONSULTING GP. WE DID OBSERVE SOME STATISTICALLY SIGNIFICANT CHANGES IN THE MORE 'FATALISTIC' MEMBERS OF OUR TARGET (PEOPLE WHO PREFER NOT TO VISIT THEIR GP IN CASE THEY GET BAD NEWS)

10. 3 Length of time would allow a friend/family member to leave a cough before visiting GP

The percentage of people who would recommend to a friend or a relative to see their GP if they had a bad cough increased from 90% to 98% at 3 weeks. However people were still more likely to recommend a friend or relative to go to the GP with the same symptom compared to their own action.
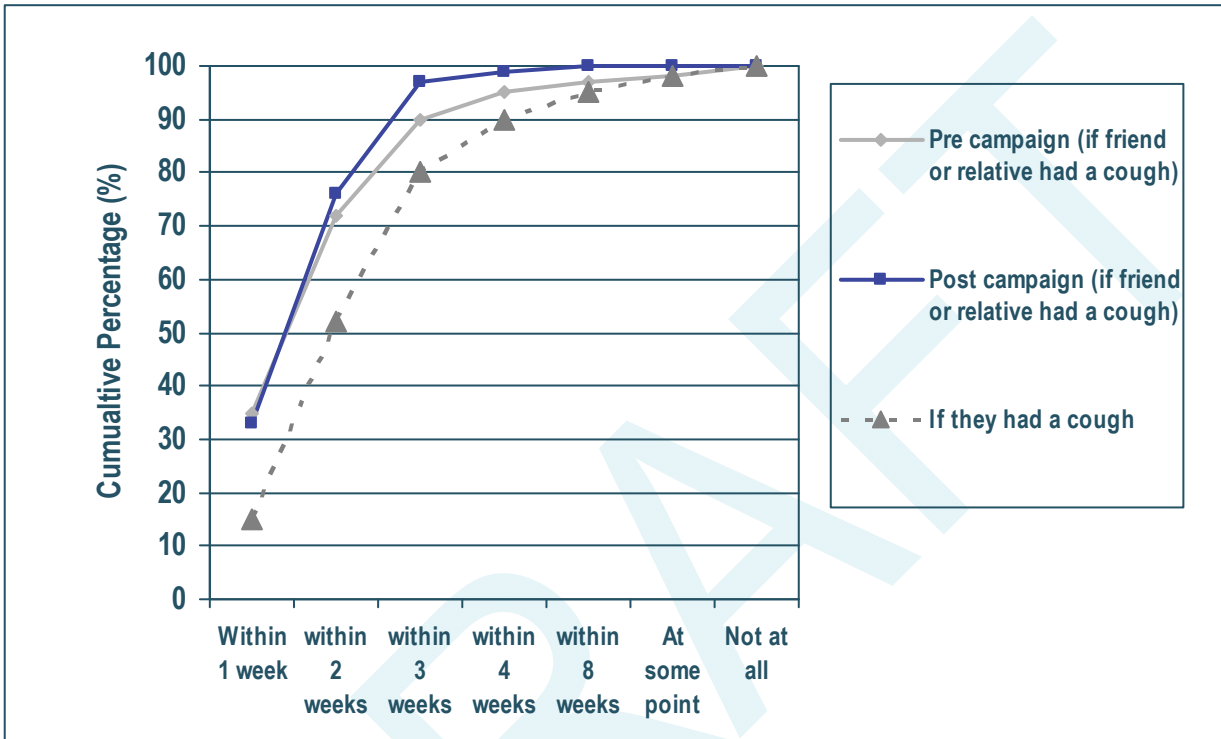

Figure 20 Length of time people would allow a friend/family member to leave a cough before visiting their GP

INCREASED LIKELIHOOD TO RECOMMEND THAT A FRIEND OR FAMILY MEMBER SHOULD VIST THEIR GP WITHIN THE FIRST 3 WEEKS OF GETTING A COUGH.

MORE LIKELY TO ENCOURAGE OTHERS TO VISIT A GP THAN GO THEMSELVES

10.4 Campaign recall

23% of the target recall something to do with the campaign (22% male, 35% female).

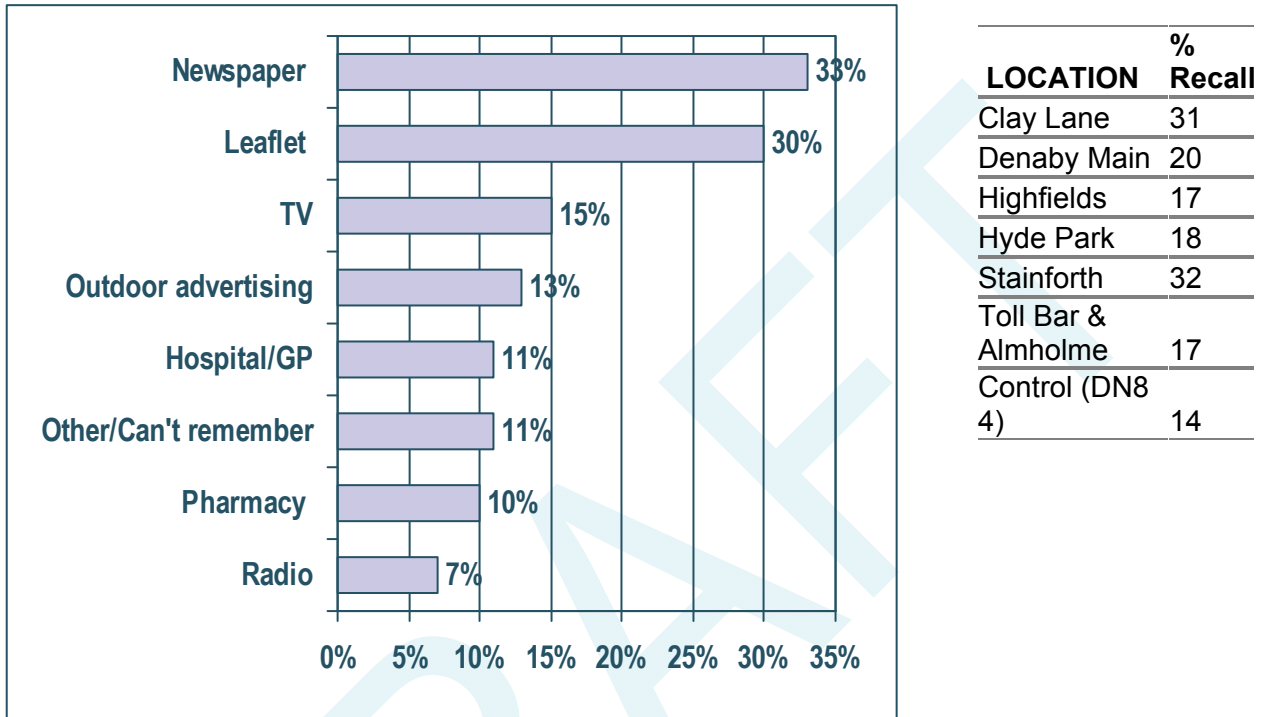| LOCATION	% Recall
Clay Lane	31
Denaby Main	20
Highfields	17
Hyde Park	18
Stainforth	32
Toll Bar & Almholme	17
Control (DN8 4)	14

Figure 21 Campaign recall

A QUARTER OF OUR TARGET RECALL SEEING/HEARING OUR KEY MESSAGE. SOME VARIATION SEEN ACROSS THE DIFFERENT TARGET LOCATIONS. ANALYSIS OF THE COST OF THE DIFFERNET MEDIA USED DOES NOT HIGHLIGHTWELL TARGETED, EFFECTIVE AND REACHED 1 IN 4

10.5 Pre- & Post- Campaign changes by location

The table below shows changes by location in key variables. The yellow boxes indicate a statistically significant result (95% level). The campaign appears to have resonated significantly in most of the target areas and relatively little in the control community.

	% Change: Pre Campaign to Post Campaign						
	Hyde Park (n=118;n=119)	Highfields (n=63;n=85)	Denaby Main (n=116;n=103)	Stainforth (n=146;n=108)	Clay Lane (n=78;n=89)	Toll Bar & Almholme (n=81;n=96)	Control (DN8 4) (n=199;n=200)
Would visit GP if had a 'really bad' cough	+8	+8	0	+6	+1	+1	-3
Would visit GP if had a 'really bad' cough and ask for an X-ray	+16	+11	+20	+21	0	-6	-3
Very concerned if had a cough for more than 3 weeks	+12	+13	+7	-7	-9	-1	-1
Would leave cough no more than 3 weeks before visiting GP	+4	+14	+6	0	-2	+1	-5
Would recommend to friend/family not to leave cough any more than 3 weeks before visiting GP	+9	+11	+7	+1	+7	+4	0
Seen/read/heard anything relating to 3 week cough	+13	+9	+7	+21	+17	-7	+7

Figure 22 Pre and Post campaign changes by location

MOST POSITIVE CHANGES ARE AROUND CAMPAIGN MESSAGE AND REACH OF CAMPAIGN – STAINFORTH; HYDE PARK AND DENABY MAIN SHOW BIGGEST CHANGES

10.6 Pre- & Post- Campaign changes by smoking status

Smokers and ex-smokers have responded better to the campaign than those who have never smoked.

	% Change: Pre Campaign to Post Campaign		
	Smokers (n=115;107)	Ex Smokers (n=280;305)	Never Smoked (n=207;188)
Would visit GP if had a 'really bad' cough	+9	+3	+3
Would visit GP if had a 'really bad' cough and ask for an X-ray	+20	+9	+12
Very concerned if had a cough for more than 3 weeks	+5	+6	0
Would leave cough no more than 3 weeks before visiting GP	+4	+9	-4

Figure 23 Pre and Post campaign changes by smoking status

CAMPAIGN HAS RESONATED SLIGHTLY MORE WITH SMOKERS/EX SMOKERS THAN NON SMOKERS. ALLAYS FEARS THAT SMOKERS OR EX SMOKERS MAY NOT TAKE NOTICE.

10.7 Chest X Ray Referrals

The following tables show the changes in the number of chest x ray referrals compared with the same period a year ago and then the 6 weeks pre and post campaign. The overall increase in chest x ray referrals across the whole PCT was 40%. This is reflected in a 31% increase in non-targeted practices and 80% in targeted practices.
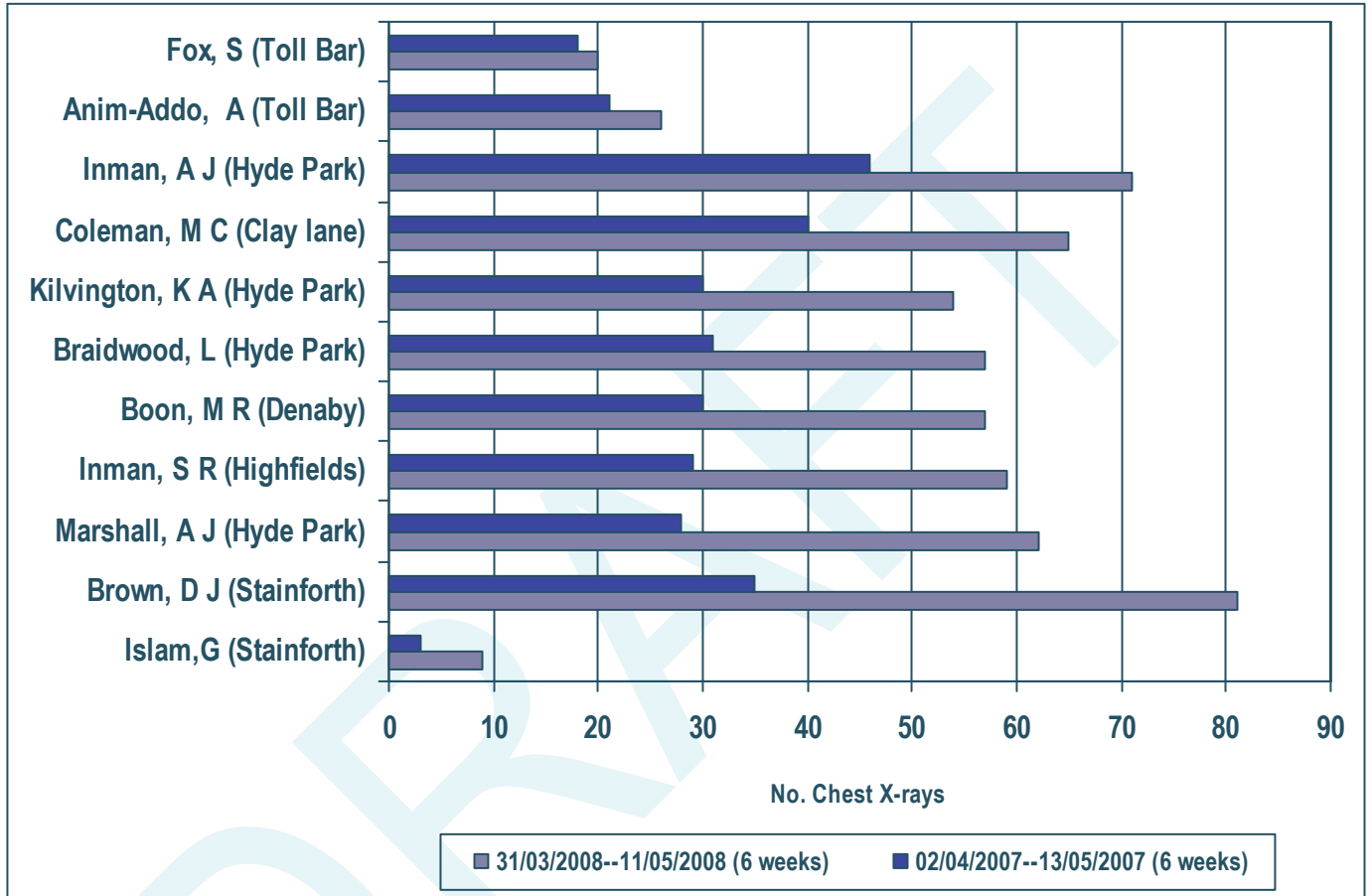

Figure 24 Pre and Post campaign changes in chest x ray referral by practice 1 year comparison

DURING AND AFTER THE CAMPAIGN THERE WAS AN INCREASE IN THE NUMBER OF CHEST X-RAYS ACROSS THE PCT COMPARED TO THE SAME PERIOD LAST YEAR. INCREASE WAS GENERALLY LARGER FROM THE SUPPORTED PRACTICES.

Comparing the 6 weeks pre and during the campaign overall there was an increase of 13% in chest x-ray referrals. This was split into a 9% increase in non-targeted practices and a 27% increase in targeted practices. No increase was seen in the 2 Toll Bar practices.
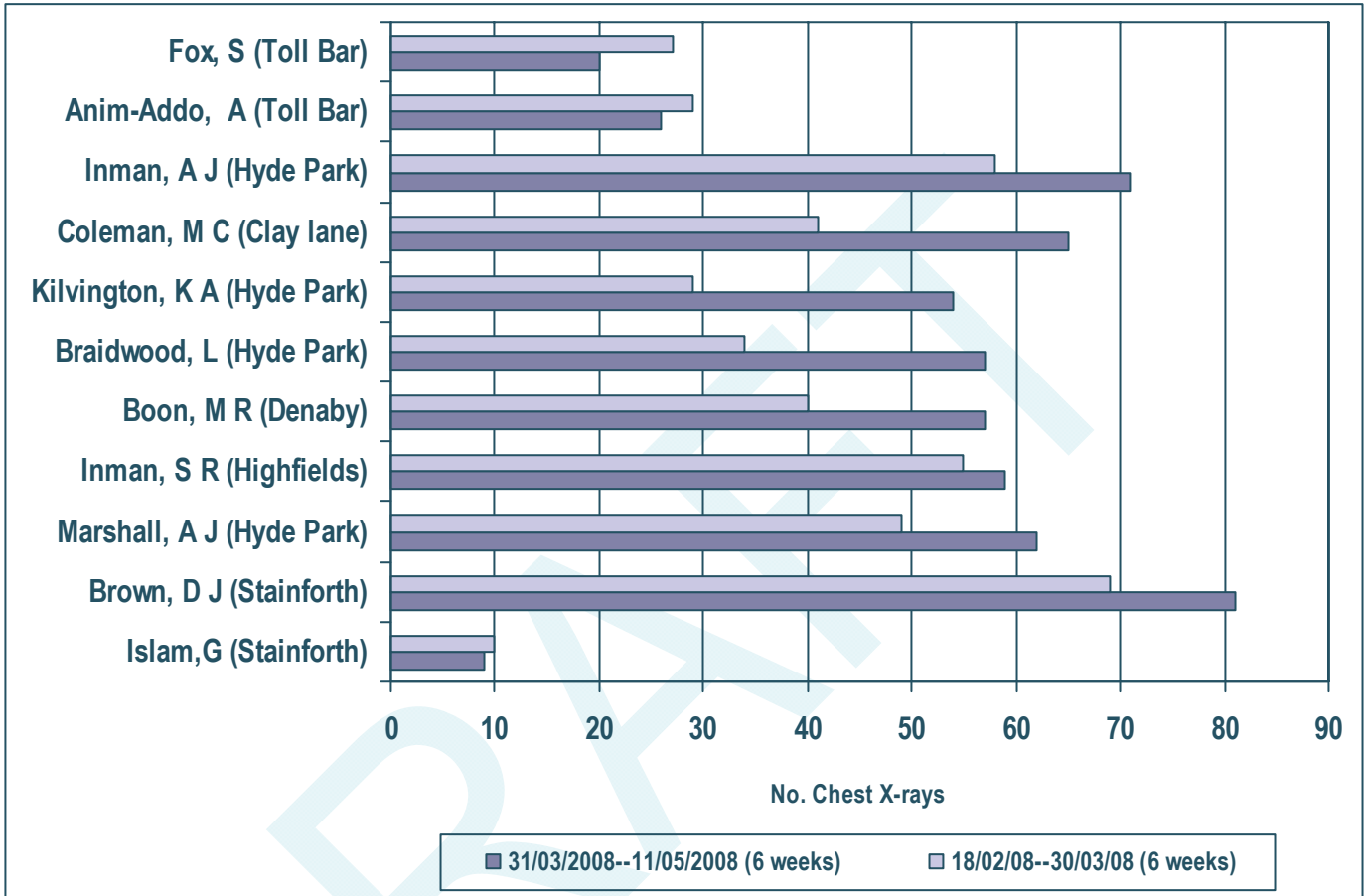

Figure 25 Pre and Post campaign changes in chest x ray referral by practice 6 week comparison

DURING AND AFTER THE CAMPAIGN THERE WAS AN INCREASE IN THE NUMBER OF CHEST X-RAYS ACROSS THE PCT COMPARED TO THE PERIOD LEADING UP TO THE CAMPAIGN. INCREASE WAS GENERALLY LARGER FROM THE SUPPORTED PRACTICES – A COMBINATION OF SERVICE PUSH AND SERVICE PULL.

10.8 Relationship between recall, shifts in attitudes and chest X-rays

There is a strong relationship between recall, shifts in attitudes and chest x rays. The correlation between recall and attitudes is 0.15 and the correlation between attitude and chest x ray referral is 0.9 and is shown graphically below.

	Stainforth (n=146;n=108)	Denaby Main (n=116;n=103)	Hyde Park (n=118;n=119)	Highfields (n=63;n=85)	Clay Lane (n=78;n=89)	Toll Bar & Almholme (n=81;n=96)	Control (DN8 4) (n=199;n=200)
Seen/read/heard anything relating to 3 week cough (% change)	+21	+7	+13	+9	+17	-7	+7
Would visit GP if had a 'really bad' cough and ask for an X-ray (% change)	+21	+20	+16	+11	0	-6	-3
Chest X-rays (% increase compared to last year) (31/3/08-11/5/08) v (2/4/07 -13/507)	+137	+90	+81	+103	+63	+18	+17

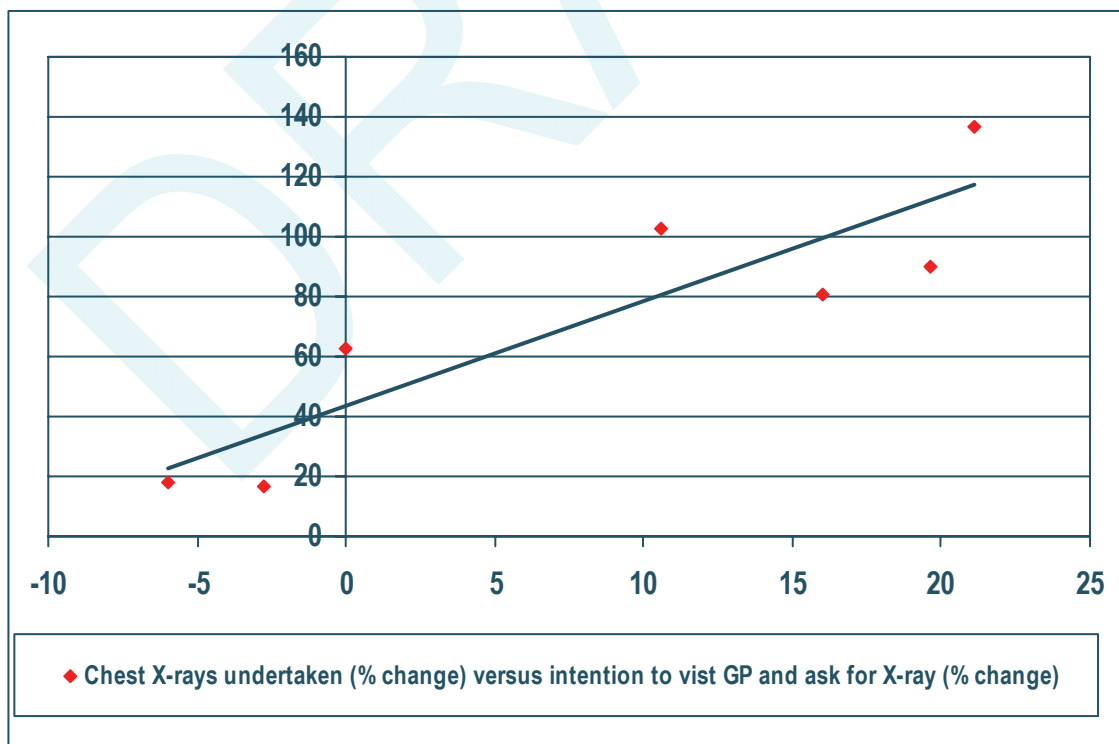**Figure 26 Relationship between recall, attitudes and chest x-rays**

● **Chest X-rays undertaken (% change) versus intention to vist GP and ask for X-ray (% change)**

Figure 27 correlation between change in attitude and change in chest x-rays

10.9 Lung Cancers Identified

The number of lung cancers identified increased in April 2008 in line with the campaign. In April 2008 54 case were identified compared to 32 in April 2007.

Interestingly this increase in cases was not sustained significantly in the following months.
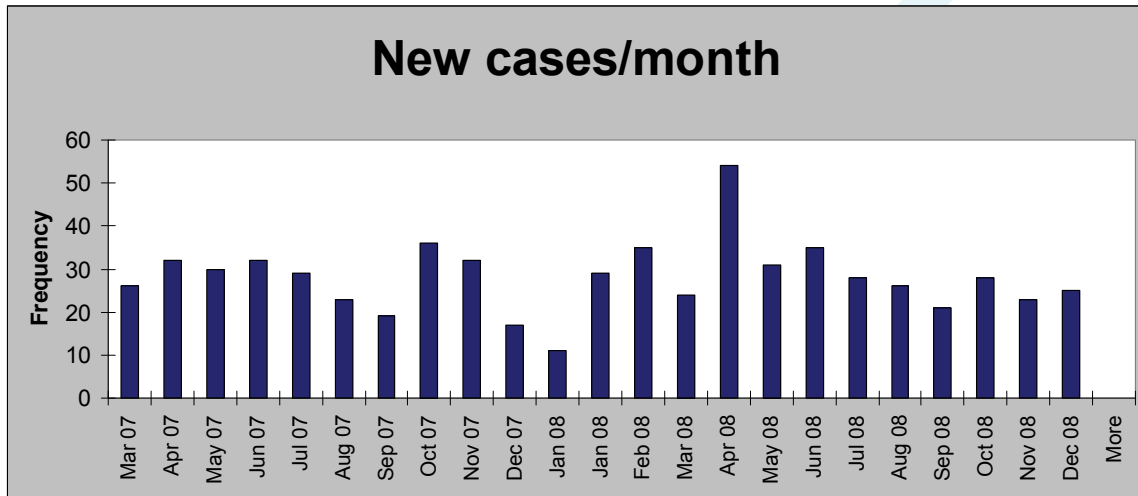

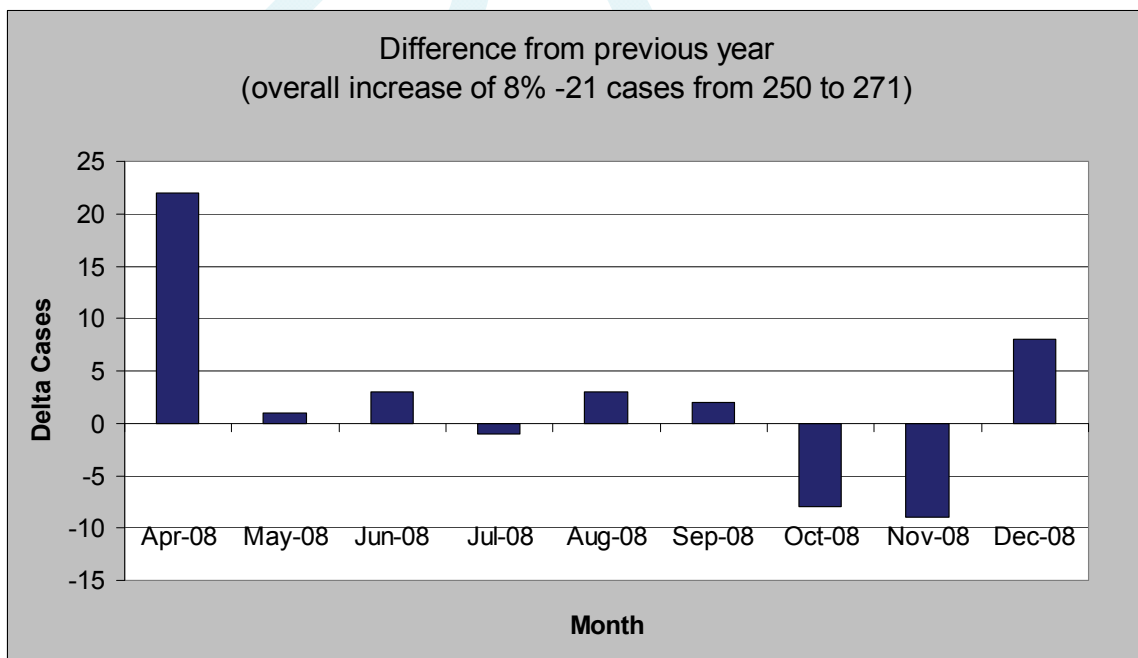**Figure 28 Number of new cases lung cancer per month**

Figure 29 Difference in number of lung cancer diagnosed compared to previous year

10.10 Lung Cancer Staging

Before the intervention 11% of new diagnoses of lung cancer were early (stage 1 or 2). Following the intervention this number has increased to 19%. These results are shown on the following graphs. The first graph shows pre- and post- campaign scores and the second shows a cumulative frequency. This is a significant difference chi-square p<0.02.
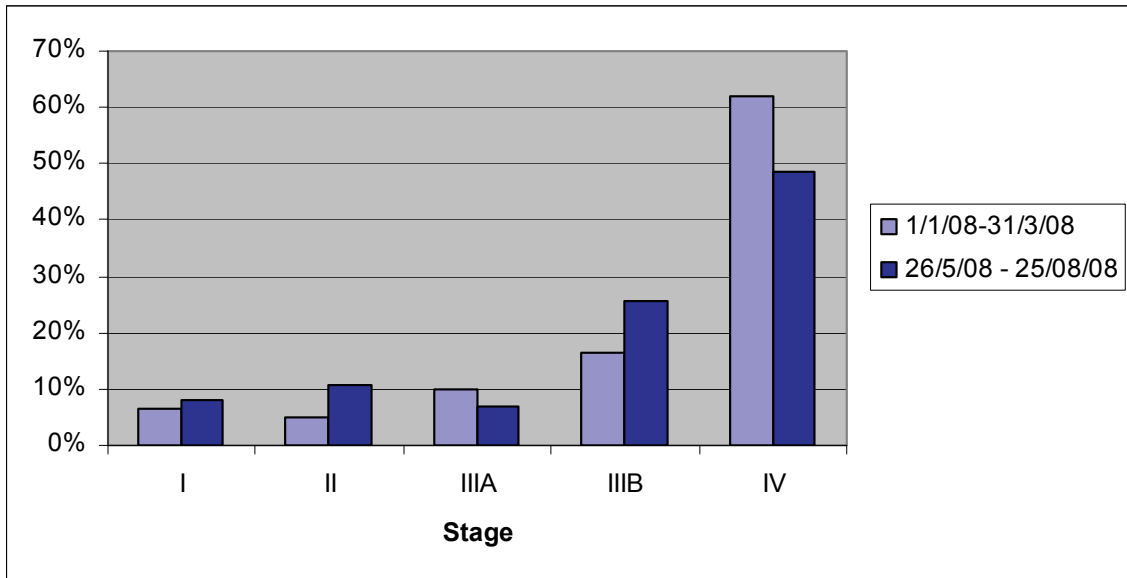

Figure 30 Comparison of stage of diagnosis of lung cancer with previous year
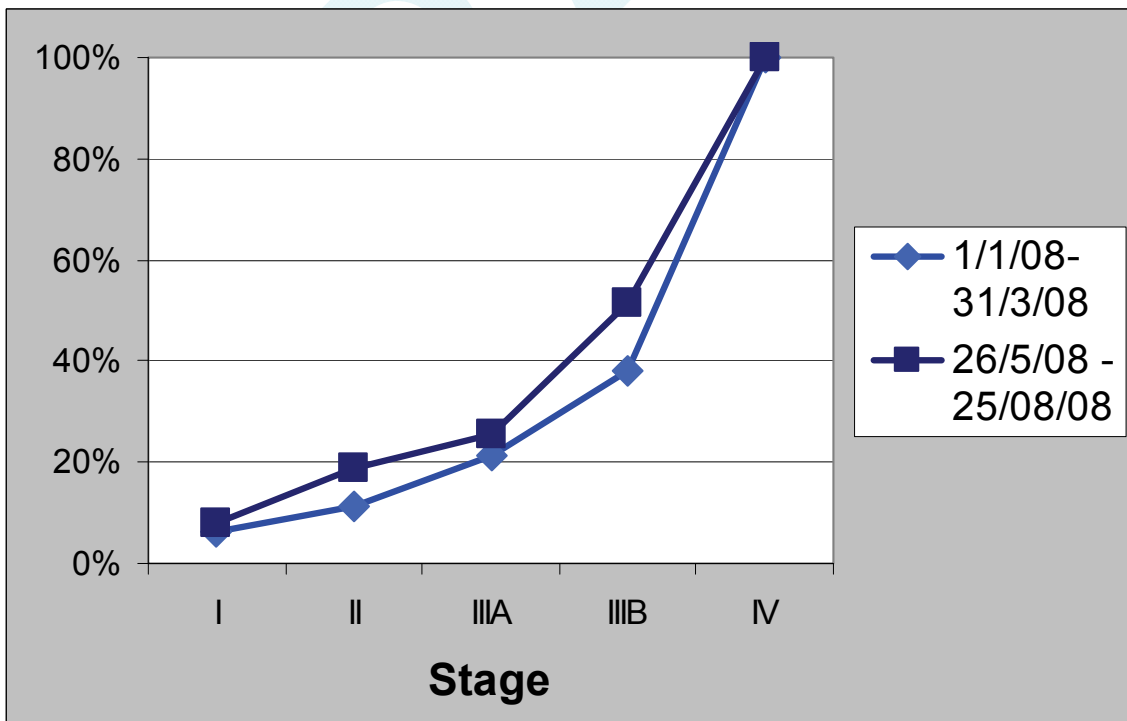

Figure 31 Cumulative stage of diagnosis compared to previous year

11.0 Conclusion

- The campaign has had a positive impact on our target audience's attitudes towards having a long term or 'bad' cough i.e. our target are now more likely to present at their GP if they have symptoms of lung cancer

- Our target are now more likely to ask their GP for a chest X-ray

- Chest X-rays have risen by twice the proposed target for the Doncaster area

- There is a strong positive relationship between our target's intent to visit their GP (with a 'bad' cough) and the number chest X-rays taking place

- Double the increase in chest X-rays from our target practices compared to the rest of Doncaster

- There are signs that the campaign has had a positive impact on those with a more 'fatalistic' attitude to health (avoid visiting GP in case they hear bad news)

- There are signs that the campaign has resonated slightly more with smokers and ex smokers than those who have never smoked

- Some variation in effectiveness across individual target areas

- The increase in chest x rays has translated into a spike of increased lung cancer diagnoses.

- The increase in lung cancer diagnoses are at an earlier stage

12.0 Next Steps

- To build the link between social marketing to a physical public response and ultimately assign a value to what we are doing

- To be the primary consideration at the outset of future social marketing projects

- To ensure hard data will be available for analysis during and at the end of any social marketing programme

- Where necessary hard data isn't available to formalise a process for collection

- On going measurement with the aim of evaluating the long term impact of the intervention and in identifying areas for future intervention.

13.0 Discussion (HOW THE PROJECT BREAKS NEW GROUND)

13.3 Championing a Social Marketing Approach within the NHS

This project was the first in the Yorkshire and Humberside region to place consumer understanding and insight at the centre of the behavioural change agenda – a method that will become essential to health improvement projects across the region. This pilot is making progress in building awareness of social marketing principles in regional health improvement.

Significantly, the patient-led principle is now being explored at far deeper level than mere public consultation. What was originally configured as a health improvement initiative is now emerging as a strategic change programme, extending across major patient care and service reconfiguration projects.

13.4   Placing Planning at the Heart of the Developmental Process

Consumer and Data planners were critical to the project team to ensure that consumer understanding and insight were placed at the centre of the behavioural change ambitions for the project, ensuring that highly pertinent insights and meaningful interpretation and understanding of issues and patients were central to the entire project

While this was achieved at a 'project' level, learning was also taken at a 'programme' level, whereby the benefits of insight as an organisational driver have now been acknowledged, resulting in a separate potential workstream (involving central DH) in the piloting of an 'Integrated Insight System.'

13.3   Insight as Inspiration

Qualitative research was commissioned to ascertain consumer attitudes and behaviours around the broader issue of lung cancer and also issues which impacted on their likelihood to present early.

The primary insight that emerged was a general lack of awareness about the symptoms. This was compounded by a lack of understanding about the benefits of getting an early diagnosis and how this improves the prognosis. This insight became the focus for the awareness driving campaign.

In addition a number of secondary insights were brought to light. These were invaluable in briefing the Advertising Agency that developed the communication as they were essential to the tone of voice (see Appendix ??? for full details).

13.6   An Integrated Approach to 'Consumer Push' and 'Service Pull'

The public awareness campaign focused on the 'consumer push': raising awareness of the symptoms of lung cancer and the benefits of early detection. However it was also necessary to ensure that the 'service pull' was targeted to make sure that patients successfully entered the service.

This involved the preparation of healthcare professionals for the initiative through additional training and also in terms of planned-in capacity within GP practices and radiology

departments. GPs in the 'hot spot' areas received specific additional clinical training through workshops, and all GPs in Doncaster were made aware of the project to anticipate wider demand. Radiology departments were helped to forecast and anticipate extra demand for chest X-rays.

13.7   Challenging Social Marketing Best Practice

The project commenced following the five step social marketing approach recommended by the NSMC (Scope, Develop, Implement, Evaluate and Follow-up). However, it became clear that a clearer focus regarding the precise nature of the project was required and this was reflected in the addition of a sixth stage: Define.

This is on the basis that the only way to effectively Scope a project is to understand exactly what the project aim is and what the success criteria are. This extra stage also makes it possible to justify project budgets and to ensure effective project evaluation at the end of the campaign.

The success of this extra stage in clarifying the whole project resulted in a recommendation to the NSMC who are proposing to use the updated six stages as their recommended approach to future projects.

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