

**Evaluation of the Bowel Cancer Awareness Pilot
in the South West and East of England:
31 January to 18 March 2011**

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Foreword by Professor Sir Mike Richards, National Cancer Director

Introduction

This report, commissioned by the Department of Health, provides an independent evaluation of the two regional pilots aimed at raising public awareness and promoting earlier diagnosis of bowel cancer. It brings together information from a wide range of sources including:

- A campaign-specific survey of public awareness of the key symptoms of bowel cancer and of the acceptability of such campaigns.
- A bespoke study of attendance at GP practices before and during the campaign to assess changes in the public's behaviour resulting from the campaign and any effect on GP workload.
- Analysis of urgent referrals to secondary care for suspected colorectal cancer both in the two pilot regions and elsewhere.
- Analysis of the impact on lower gastrointestinal endoscopy activity.
- Analysis of the impact of the campaign on the uptake of bowel cancer screening.
- Analysis of numbers of cancers diagnosed and (where available) stage at diagnosis, through cancer registries.

I am extremely grateful to Dr Gina Radford and Matthew Taylor for compiling the report and for all those who contributed to it.

Why run awareness and early diagnosis campaigns?

Cancer survival rates in England are poor in comparison with those in other developed countries. We know that one year survival rates are particularly poor across a range of cancers. There is now a broad consensus that late diagnosis is a major contributor to this. It has been estimated that if survival rates in England were to match the best in Europe around 10,000 deaths within five years of diagnosis could be avoided each year. Around 1,700 of these avoidable deaths relate to patients with bowel cancer.

Based on this evidence the Government has set out its ambition to halve the gap between England's cancer survival rates and those of the best in Europe, representing the prevention of 5,000 avoidable deaths.

We also know that public awareness of the symptoms of cancer is relatively low and that patients may be reluctant to seek medical advice for a number of reasons. The campaign therefore focused on:

- Raising awareness at a population level of cancer symptoms
- Encouraging those with relevant persistent symptoms to go to their GP
- Communicating the message that the earlier a cancer is found, the more likely it is to be treatable

In parallel with this work, there is an ongoing programme of work to support GPs to assess, investigate and/or refer patients appropriately and to provide them with better access to diagnostic tests.

Campaign activity

Since 2010/11, the Department of Health has been funding a programme of campaigns to deliver these objectives. The campaigns, which are being developed under the *Be Clear on Cancer* brand cover a range of cancers and symptoms and are aimed at the demographic groups most likely to develop cancer and to delay presentation. Clinical and other experts are consulted on the key symptoms to inform the messages and these are then tested with the public.

The campaigns use mainly TV, radio and print advertising to inform the public of the key cancer symptoms. Some local pilots also use community engagement strategies.

The campaigns feature real GPs and seek to encourage those who may have the relevant symptoms to see their own doctor early, emphasising the benefits of earlier diagnosis. Face to face events are also held and allow members of the public to talk to trained staff about the campaign and cancer symptoms.

In January 2011, the Department of Health piloted the first ever regional campaign to raise public awareness of the symptoms of bowel cancer and encourage people with the relevant symptoms to see their GP. The campaign ran for seven weeks in the East of England and the South West. The aim was to run the campaign nationally, based on the results of the pilot. This campaign is the subject of this evaluation.

What did the evaluation of the regional pilot tell us?

Key results of the regional bowel cancer pilot were:

- The campaign was very well received, there was overwhelming agreement among the public and GPs surveyed that this was an important government initiative.
- There have been positive changes in the public's and GPs' awareness, research from the pilot areas showed high levels of campaign awareness and increased understanding of the symptoms of bowel cancer amongst the core target audience (adults aged 55+C2DE).
- There was a change in public behaviour, in both regions more people went to see their GP with bowel cancer symptoms, with an approximate 50% increase in people over the age of 50 attending with the symptoms highlighted by the campaign. There was also an increase in bowel cancer screening kits returned in both regions.
- The burden in primary care was manageable, on average there was one additional attendance to general practice per week during the period of the pilot.
- There were more patients referred for investigation for bowel cancer. The number of urgent GP referrals for suspected cancer (two week wait referrals) increased across the region with significantly marked increases in Trusts that were in the heart of the TV advertising regions. Similarly, there were increases in the demand for colonoscopies, the key diagnostic investigation for bowel cancer.
- Based on the information we have so far, there has been no increase in the number of new diagnoses of bowel cancer or change in stage at diagnosis, compared with the previous year. However, these results do show that more patients were diagnosed with bowel cancer via the urgent GP referral pathway (two week wait) compared to other routes, such as emergency presentation. It has also been estimated that, based on the number of colonoscopies carried out during the period of campaign, between 22 and 44 cases resulted in the removal of polyps (pre-cancerous cells), thus preventing future occurrence of cancer.

These results were very important for informing the preparations for the national campaign. In particular, when we started the pilot campaigns, we did not know what impact there might be on referrals to secondary care or on endoscopy demand. The results from the pilot enabled us to model the likely impact across the country and to give the NHS the information needed to support preparation.

We also learned much about the management and evaluation of such campaigns, for example, the pilot did not collect data on the number of additional polyps removed. We are now collecting this information in one region as part of the national campaign.

While our original hope was to see an increase in the number of cancers diagnosed and/or the proportion of cancers diagnosed at an early stage. In addition to the very positive results in terms of support for the campaign, awareness of symptoms, additional presentations to the GP and increase in urgent referrals to secondary care, it is clear that we cannot deliver this with one-off initiatives. We need to bring about major changes in behaviour and outcomes, and this can be achieved only by a long-term programme of work, one that is focused not only on raising symptom awareness and encouraging early presentation, but which tackles all possible reasons for late diagnosis. We are still working out the best ways to raise symptom awareness, encourage prompt presentation and support GPs to diagnose and refer on to secondary care and will need to refine our approach over time.

We have set ourselves an enormous challenge in terms of delivering earlier diagnosis, and thereby achieving a significant improvement in cancer survival rates. I believe that the results set out in this evaluation report show that we have begun to deliver the necessary behaviour change to achieve this.

A handwritten signature in black ink, appearing to read 'Mike Richards', with a stylized flourish at the end.

Professor Sir Mike Richards CBE
National Cancer Director

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A number of people from different organisations have contributed to this report. The following list is not exhaustive, but the authors would like to give particular thanks to the following individuals and organisations:

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1. Management Summary

The Department of Health aims to save an additional 5,000 lives per annum by 2014/15 by bringing survival rates for cancer in line with the European average. Early diagnosis through increased awareness and earlier presentation is seen as key to achieving this.

A bowel cancer awareness pilot campaign was funded by DH and ran from 31 January to 14 March 2011 within the East of England and South West. It consisted of a variety of approaches, including TV, radio and press advertising, leaflets, and face to face events. Messages were developed and tested prior to the campaign and advertising creative was designed around a brand identity "Be Clear on Cancer". This report is an evaluation of the pilot campaign.

The objectives of the campaign were to:

1. Raise the awareness of the signs and symptoms of bowel cancer among the target audience (over 55s)
2. Increase the presentations of symptoms of bowel cancer by the target audience to primary care.

Evaluation of the campaign found that overall it had achieved its stated objectives in terms of awareness raising and presentations to primary care. While ultimately there was no significant increase in the numbers of bowel cancers diagnosed associated with the campaign, it is estimated that there were a number of cancers prevented due to polyp removal and subsequent patient surveillance.

Specifically, the campaign raised both awareness and knowledge among the public of the signs and symptoms of bowel cancer and resulted in a greater confidence among those whose knowledge had improved in their ability to spot signs and symptoms and what to do as a result. Acceptability and support for the campaign was very high with 95% of the public and 89% of GPs supporting the idea of the campaign.

The campaign resulted in an increase in presentations to primary care for bowel cancer related symptoms. While this appeared to be mostly from those within the target group (55+s) there was an increase in one network (Anglia) of those younger than this group. The increase in presentations led to a significant increase in urgent GP referrals (2WW) to secondary care, with most being within the target group, although there was a greater relative increase in those younger. Most Trusts in the pilot areas experienced more than a 40% increase in the peak month of March. There was considerable variation between Trusts in the demand experienced and the impact of this on overall workload.

As stated there was no significant increase in the number of cancers detected in the period associated with the campaign in the pilot areas, but it is estimated that there were between 22 to 44 cases with large adenomas removed who would, as a result, be included in a surveillance programme for future polyp detection to prevent cancers developing in these individuals in the future.

2. Methodology

The Department of Health (DH) working with the National Cancer Action Team (NCAT), Cancer Research UK (CRUK), COI and others worked together during 2011 and early 2012 to evaluate the bowel cancer pilots. In the remainder of this document, we refer to this group as the Evaluation Team.

The Team set out what would need to be measured in order to evaluate the pilots, collecting evidence on:

1. **Inputs** – what went into the campaign (time, effort and cost);
2. **Outputs** – what came out of the campaign (materials, delivery, reach);
3. **Outcomes** – what patients and GPs took out of the campaign (awareness, knowledge, changes in attitude, desire to act); actual changes in behaviour and the results of this (screening uptake, perceived and actual presentation to GPs, number of urgent referrals for suspected cancer, number of examinations and diagnoses, number of cancers, stage at diagnosis).

This evidence was extracted or collected by colleagues across the NHS, DH, NCAT, and CRUK. Research with the target audience and with GPs was carried out by TNS BMRB and analysis of GP visits was carried out by Mayden.

The target audience research was based upon the Cancer Awareness Measure (CAM), a validated set of questions designed to reliably assess cancer awareness. It was developed by Cancer Research UK, University College London, King's College London and University of Oxford in 2007-8.

Finally, the Evaluation Team worked together to analyse the results and draw conclusions, as presented in this report. The report tries to cover as many points as possible on the journey from campaign awareness, through to GP presentation, diagnosis and beyond – but it should be noted that the data is not longitudinal – it does not follow individuals all the way through the system. Such an approach would be prohibitively expensive. Rather, it looks at different data sources along this journey and tries to “triangulate” between them in order to draw conclusions about the effect of the campaign.

The Evaluation Team would like to acknowledge the contribution of a large number of colleagues who have helped with evaluation throughout and following the pilots. Without their efforts, insufficient evidence would have existed to allow a thorough evaluation – or such evidence would have been inaccessible.

3. Campaign Background and Objectives

Improving cancer survival outcomes in England

There were around 265,000 new cases of cancer registered in England in 2009. Cancer is the cause of death for 29% of people in England, and more than 1 in 3 people will develop cancer of some form during their lifetime. Despite a continued fall in cancer deaths, England's rate is still higher than the European average. Analysis of English survival rates has concluded that there are 10,000 lives that could be saved each year in England if they matched the best in Europe. Colorectal, breast, and lung cancer account for approximately 5,000 of these lives.

Recent data suggests England's performance has continued to improve since 1999, but has not narrowed the survival gap because Europe has also continued to improve¹. Analysis has shown the majority of the difference in five-year survival is within the first year of diagnosis. One-year survival rates are a proxy for late diagnosis: people are much more likely to survive for one year if their cancer is diagnosed early. It is generally accepted that late diagnosis is the main cause of England's poorer survival rates, and is a problem across England. Some segments of the population, for instance lower socio-economic groups, are particularly affected by late diagnosis.

There is broad agreement that there are three main reasons for late diagnosis:

1. Symptom awareness among the public is low
2. Even if people are aware of the potential significance of their symptoms, there are often delays before they present to the GP
3. Practitioner or systems delay, e.g. late diagnosis occurring through relating symptoms to another health problem, insufficient use of the two week wait urgent referral route and insufficient access to diagnostic tests.

The Government published its commitment to improving outcomes for cancer patients in *Improving Outcomes: a Strategy for Cancer (January 2011)*. This sets a level of ambition to save an additional 5000 lives per annum by 2014/15. Earlier diagnosis of patients with symptoms is seen as key to achieving this ambition, along with improvements in screening and treatment.

In order to promote earlier presentation by patients, from 2010/11 DH has funded a programme of awareness-raising campaigns under the brand *Be Clear on Cancer*. These campaigns cover a range of cancers and symptoms and are aimed at the relevant demographic groups. The campaigns are first tested locally. Learning from local experience is then incorporated into regional pilots. If the regional pilots are successful, national campaigns covering the whole of England are considered.

¹ Breast cancer survival rates are an exception to this trend

Improving early diagnosis of bowel cancer

Bowel cancer is one of the biggest killers and is the tumour site where potentially there is the most scope for rapid improvement in outcomes. Work undertaken by the London School of Hygiene and Tropical Medicine estimated that 1,700 deaths could be avoided each year by bringing bowel cancer survival in this country up to the best in Europe. This figure is a breakdown by tumour type of the 10,000 avoidable deaths if England's survival rates matched the best in Europe. This was developed by Professor Mike Richards (National Cancer Director) and is derived from the Abdel-Rhman et al study into the number of avoidable deaths in the UK when compared to Europe (see both papers in the cancer supplement of the BJC, 2009).

Symptom awareness for bowel cancer is low, only 19% of people recognised sustained change of bowel habit as a potentially cancerous symptom, and only 28% recognised bleeding (Una McLeod and UCL team study – Public Awareness of Cancer in Britain, unpublished). Over 90% of bowel cancer patients diagnosed with the earliest stage of disease survive five years from diagnosis compared to only 6.6% of those diagnosed with advanced disease which has spread to other parts of the body².

Diagnosis through screening saves lives. However, survival rates cannot be improved to match the best in Europe purely through screening programmes.

Piloting a public awareness campaign focusing on bowel cancer

The *Be Clear on Cancer* bowel cancer awareness campaign was piloted in February and March 2011 in two 'test' Strategic Health Authority (SHA) regions (East of England and the South West) to test the feasibility of a national campaign, with the other health economies in England acting as a control group for comparison.

DH worked closely with SHAs, NCAT and Cancer Networks in both regions on the implementation of the campaign and to ensure that local primary and secondary care clinicians were aware of the campaign plans and were ready to deal with any increase in presentations.

Advertising for TV, radio and print was developed using insight from qualitative research and in conjunction with clinical and stakeholder advice. This advertising and a series of public events then targeted people over the age of 55 from lower socio-economic groups, as they have a higher risk of bowel cancer and are more likely to delay presentation.

The campaign objectives were therefore to:

1. raise awareness of the signs and symptoms of bowel cancer among the target audience (over-55s); and
2. increase presentations of symptoms of bowel cancer by the target audience to primary care.

² NCIN expert analysis on Colorectal Cancer Survival by Stage at <http://www.ncin.org.uk/analysis/index.shtml>

In 2010/11, DH funded 59 early diagnosis local projects across 109 Primary Care Trusts, focussing on breast, bowel and lung cancers. The evaluation of these projects is outside the scope of this document, but where possible we have noted any overlap between local projects and the pilots.

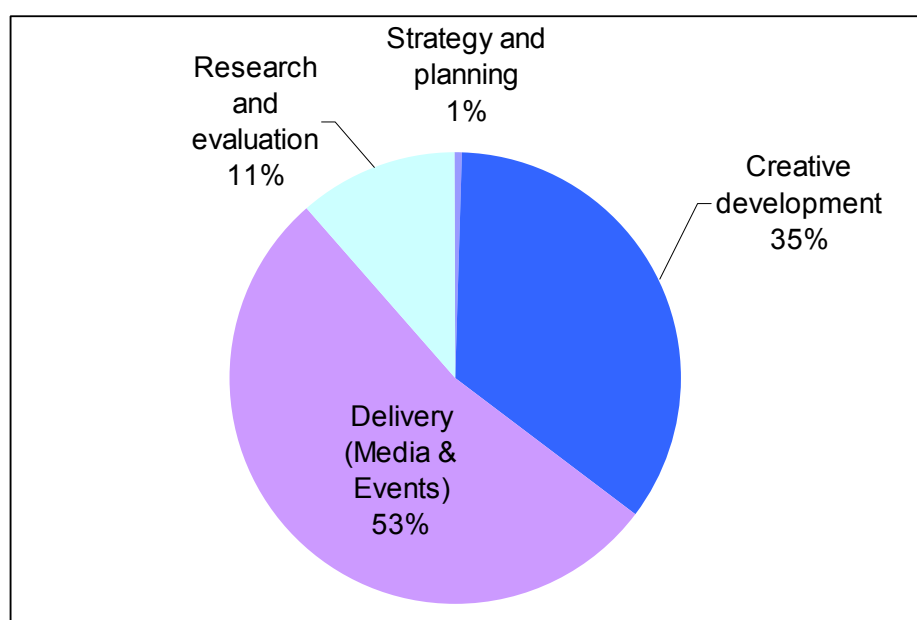
4. Campaign Inputs and Outputs

This section describe 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; describes partnerships forged with other organisations; and provides an overview of the local projects (as context only).

4.1. Campaign costs

Total marketing costs for the campaign were around £1,590,000. Further analysis of the campaign costs showed that they could be broken down (approximately) as follows:

Figure 1 – Approximate breakdown of costs



An estimate was made that around 35% of the overall costs invested paid for material that could be used again in the event of a national campaign (mostly creative development) and 65% were one-off costs that would be incurred again (planning, delivery and evaluation). It should be noted that the marketing costs do not capture the value of non-paid-for activity such as PR.

4.2. Creative development

Two creative agencies were asked to develop a creative concept and executions to be used as part of the advertising campaign. The creative approach was intended to identify an overarching proposition which could be used as a brand stamp on the advertising. The ambition was to create a positive campaign brand for the target audience to:

1. become clear about the symptoms of bowel cancer;
2. understand the action they need to take (visiting their GP); and
3. understand the benefits of doing so (cancer is treatable if caught early and the symptoms are often nothing to worry about).

Qualitative research was conducted by Cragg Ross Dawson to help inform Department of Health's decision about which creative agency should be commissioned to undertake the campaign, and to help identify, develop and refine the creative route that has the most potential to meet the strategic and communications objectives for the campaign.

Fourteen 2-hour group discussions were conducted among the 'at risk' target audience and adult children of at risk parents' samples. A further six mini group discussions were conducted amongst people from ethnic minority communities. Six individual interviews were conducted with GPs. Groups and interviews were conducted between 28 October and 11 November 2010 in the East and South West of England, and London.

The main findings of the research showed that the M&C Saatchi approach, using Be Clear on Cancer, was well received and more effective. The branding was felt it to be authoritative and appropriate. It avoided skirting around the issue of cancer and the 'stamp' was seen as direct and conveying seriousness. Also, the brand was seen to stand on its own and was clearly about cancer when seen in isolation. It is also applicable to any form of cancer.

.As a result of these research findings M&C Saatchi were appointed to further develop the campaign and key messages, i.e.

1. If you've had blood in your poo or looser poo for 3 weeks, your doctor wants to know.
2. Chances are it's nothing to worry about, but it could be the early signs of bowel cancer, so tell your doctor. Finding it early makes it more treatable and could save your life.

These key messages were supported by a range of stakeholders, including clinicians. The campaign was designed to work through a combination of education (teaching people common but unrecognised signs and symptoms) and permission-granting (making it acceptable for a target audience, who may not feel entitled to access services, to go and see the doctor).

A straightforward tone of voice was crucial in normalising bowel cancer and its symptoms. By publicly using a simple and common language, the campaign helped people imagine the sort of conversation they might have with their GP.

Figure 2 – Example creative (press ad)



4.3. Communication channels

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

Figure 3 – Channel choices

	Targeted	Reassuring	Clear
TV	High consumption, can be discretely targeted	Delivers authority and stature	Medium requires simple message
National Press	High consumption, can be discretely targeted	Authoritative, trusted and 'private' medium	Long form copy can make CTA clear, retained
Local Press	High consumption	Trusted and 'private' medium	Long form copy can make CTA clear, retained
Radio	Some stations listened to by audience	Trusted and 'private' medium	Medium requires simple message
Outdoor	Not an OOH audience, but can be discretely targeted	Impersonal broadcast channel	Medium requires simple message
Online	Not consumed by this audience	Not particularly well trusted, especially by this audience	Often requires secondary action
PR	Can be discretely targeted	Authoritative voices/spokesperson	Simple, clear messages most effective
Events	Can be discretely targeted	Authoritative voices can boost this	Opportunity for take home collateral
Commercial Partnerships	Message will be challenging for commercial partners	Unlikely, outside of trusted healthcare providers	Dependent on partnership – message challenging
DRM	Can be very discretely targeted, effective	Trusted and 'private' medium, used in the sector	Long form copy can make CTA clear
Owned channels	Dependent on channel – message challenging	Authoritative voices/spokesperson	Dependent on channel, but can be made clear

Key: green = positive, amber = potential, red = negative

There were a number of restrictions inherent in a regional pilot campaign that determined the use of certain communication channels.

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 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 as satellite channels cannot be purchased on a regional basis.

Taking these restrictions into account, a campaign plan was then developed that would deliver the pilot in the East of England and in the South West between the end of January and the end of March (see figure 4).

Figure 4 – Channel plan



The planned and actual delivery against this plan is shown in the following section.

4.4. Campaign outputs (reach and frequency)

Figure 5 – Campaign outputs

	Planned Delivery	Achieved delivery, East of England	Achieved delivery, South West
TV	<ul style="list-style-type: none"> 82% reach @ 13.2 OTS (Opportunities To See) 	<ul style="list-style-type: none"> 88% reach @ 13.1 OTS in Anglia 	<ul style="list-style-type: none"> 90% reach @ 14 OTS in HTV West 90% reach @ 14.4 OTS in West Country
Radio Media was bought against BARB (TV) areas, but radio reach figures are quoted against RAJAR (radio) areas.	<ul style="list-style-type: none"> 34% reach @ 22 OTH in East of England 19% reach @ 18 OTH in South West 17% reach @ 17 OTH in Wales/West 	<ul style="list-style-type: none"> 34% reach @ 23 OTH (Opportunities To Hear) in Anglia 	<ul style="list-style-type: none"> 19% @ 19 OTH in South West 17% @ 17 OTH in Wales and West
Regional Press	<ul style="list-style-type: none"> 49% reach @ 5.7 OTS in East of England 48% reach @ 5.3 OTS in South West 	<ul style="list-style-type: none"> 47% reach @ 5.7 OTS 	<ul style="list-style-type: none"> 47% reach @ 5.4 OTS
Face-to-Face Events	<ul style="list-style-type: none"> N/A 	<ul style="list-style-type: none"> 2,600 in-depth contacts 	<ul style="list-style-type: none"> 1,900 in-depth contacts
Online Search	<ul style="list-style-type: none"> 10,981 clicks in East of England 8,097 clicks in West 6,545 clicks in South West 	<ul style="list-style-type: none"> 7,374 clicks – 67% of forecast 	<ul style="list-style-type: none"> 6,652 clicks in West – 82% of forecast 1,430 clicks in South West – 22% of forecast
Inserts	<ul style="list-style-type: none"> N/A 	<ul style="list-style-type: none"> 1,194,000 inserts delivered through national press 6,541 freesheet inserts TOTAL = 1,200,541 inserts 	<ul style="list-style-type: none"> 767,000 inserts delivered through national press in South West 299,000 inserts delivered through national press in West (excl Wales) 22,616 freesheet inserts in South West 34,495 freesheet inserts in West (excl Wales) TOTAL = 1,123,111 inserts

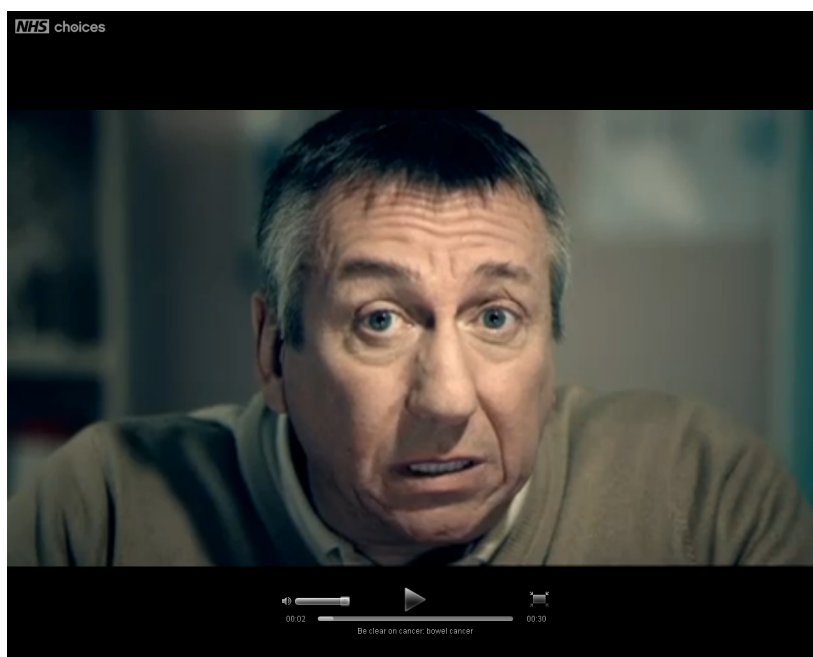
Note: reach figures represent the proportion of C2DE adults aged 55+.

4.5. TV

The TV ad features four people who are representative of the target audience talking about their symptoms and cuts to a patient talking with their GP. The voiceover explains that some of the symptoms may be the early signs of bowel cancer and that the viewer should tell their doctor if they have these symptoms. The GP says “it doesn’t matter how you tell me, just tell me”. The viewer sees the ordinary people again, thinking by themselves, and the voiceover explains that catching bowel cancer earlier makes it more treatable. The ad finishes with the slogan: *Be Clear on Cancer*.

The ad can be viewed on the campaign website www.nhs.uk/bowelcancer.

Figure 6 – TV advert (30 seconds)



For the South West region, the ad was run on West Country TV and HTV West from 31st Jan to 20th March 2011 (60 days). For the East of England, the ad was run on Anglia TV over the same period.

4.6. Radio

There were three executions of the radio ad, along the lines of the example below.

Figure 7 – Example radio advert script (30 seconds)

Male 1	I don't really know how to put this doctor.
Male 2	Something's not right.
Female 1	It's loose.
Male 3	There's always a bit of blood.
Male Voiceover	It doesn't matter how you tell your doctor, just tell them. Blood in your poo, looser poo and going more often than usual are all possible signs of bowel cancer. Chances are it's nothing serious, but if you've had any of these symptoms for three weeks or more, tell your doctor. Finding it early makes it more treatable, and could save your life. Be Clear on Cancer.

Figure 8 – Radio stations used

Radio Stations: South West	Radio Stations: East of England
Heart Gloucestershire	Heart 97.6 FM Beds/Bucks/Herts
Heart Somerset	Heart 96.6 FM Northants
Heart North Devon	Heart 103.3 FM Milton Keynes
Gold Plymouth	Heart 103 FM Cambridgeshire
Heart Plymouth and South Hams	Heart 102.4 FM Norfolk
Gold Bristol/Bath/Wiltshire	Heart Suffolk
Heart Bristol/Bath/Wiltshire	Heart 102.7 Peterborough
Global Radio Devon	Heart 96.1 FM Colchester
Southwest Local Radio Group	Heart 96.9 FM Bedford
First Radio South West	Gold Bedford
Heart Dorset	Global Radio Essex
Spire FM Salisbury	Gold Norfolk
Forest FM	Gold Suffolk
	First Radio Anglia

Radio ads ran from week commencing 29th Jan to week commencing 14th March.

4.7. Regional press

There were three executions of the press ads, along the lines of the example below. All were run in full page, colour, where available.

Figure 9 – Example press ad



Ads in each title were generally run on one day a week for six weeks over a seven-week period, from w/c 31st Jan to w/c 14th March.

Figure 10 – Regional press titles

Regional Papers: South West	Regional Papers: East of England
Western Morning News	Norfolk Eastern Daily Press
Plymouth Extra	East Anglian Daily Times
North Devon Journal	Suffolk & Ipswich Advertiser Group
West Briton	Luton Dunstable Herald & Post Group
Cornish Guardian	Luton & Dunstable Express
The Herald (Plymouth)	Luton on Sunday
Torquay Herald Express	Norwich Advertiser
South Hams Gazette & News	Bedfordshire on Sunday
Mid Devon Advertiser & Times Group	Cambridgeshire Times & Standard Group
Bournemouth Daily Echo	Bedford Times & Citizen Group
Bristol Observer Series	MK News
Bristol Evening Post	Milton Keynes Citizen
Western Daily Press	Lynn News (Fri)
Western Gazette	Lowestoft & Beccles Journal Group
	Fenland Citizen
	The Hunts Post
	Bury Free Press
	Bury Citizen
	Suffolk Free Press
	Welwyn & Hatfield Times
	Watford Observer
	Ipswich Evening Star
	North Herts Comet Group

4.8. Inserts

Inserts (bowel cancer leaflets) were placed in the regional versions of national press titles and also in freesheets so the totals below do not match the figures shown previously.

Figure 11 – National press inserts

Title	East of England	South West
The Sun	241,000	201,000
News of the World	193,000	163,000
Mirror	122,000	50,000
The People	39,000	26,000
Express	60,000	54,000
Sunday Express	50,000	45,000
Daily Mail	210,000	239,000
Mail on Sunday	143,000	158,000
Marshall Ward, Great Universal, Kay's & Empire	136,000	90,000
Grand Total	1,194,000	1,026,000

4.9. Face-to-face events

Face-to-face (F2F) activity acted as an extension of the campaign in the two pilot regions. It provided more detail on the symptoms of bowel cancer by:

1. encouraging the target audience to visit the stand and find out more
2. providing more information on the two key signs and symptoms; blood in poo, or looser poo for three weeks;
3. introducing other symptoms such as lumps in the tummy; and
4. distributing a printed leaflet

The activity also encouraged those who do have the symptoms to go to their GP quickly, as early detection could save their life. Staff were recruited on the basis of previous experience working on health campaigns or in the health sector and a nurse worked as part of the team at all events to provide specialist advice to the public.

The event teams needed to encourage people to leave their immediate errands and enter into a conversation with them instead. For this reason, as a 'hook', they used a positive upfront messaging on stands, highlighting the fact that early diagnosis leads to greatly improved survival chances. Photos of bowel cancer survivors who reflected the target audience were used on the stands and collateral to bring individual case studies to life.

At each event the team created a consultation area for people who wanted to discuss symptoms discreetly. Chairs were set up inside for a one-to-one chat with staff or the nurse.

Leaflets from DH were used as a tool to discuss the signs; and appointment cards were designed to be given to people displaying signs or concerned on behalf of others. Staff and nurses wore white branded t-shirts and orange branded fleeces in order to stand out.

Shopping centres were chosen for the opportunity they provided to reach and engage with 55+ C2DE target groups.

Input from PCTs also helped to define final venue selection – to ensure that all relevant cancer networks were covered. 3-4 consecutive activity days were carried out per venue as experience from local DH campaigns shows new faces visit daily. Events ran for 30 days (15 in each region) from 2nd – 25th March in eight different shopping centres (four in each region) and were held on weekdays and Saturdays only.

Figure 12 – Event venues and dates

Region	Centre	Town	Dates	Days
East of England	The Buttermarket	Ipswich	3rd-5th Mar	3
	Victoria Centre	Southend-on-Sea	9th-12th Mar	4
	Harlequin Centre	Watford	16th-19th Mar	4
	Queensgate	Peterborough	23rd-26th Mar	4
South West	The Galleries	Bristol	2nd-5th Mar	4
	Green Lanes	Barnstaple	10th-12th Mar	3
	Sovereign Centre	Bournemouth	16th-19th Mar	4
	Drake Circus	Plymouth	23rd-26th Mar	4

The face-to-face marketing agency, Carlson, estimated how many people “responded” to the campaign at the roadshow events. They estimated:

1. Initial contacts (brief conversations only);
2. In-depth contacts (longer, more in-depth conversations);
3. Leaflets distributed; and
4. Appointment cards completed.

There was no clear pattern to show that the number of contacts made per event in one region was any greater than the other. Rather, there was significant variation in response – which was more likely to be down to circumstances at the event than overall awareness of the campaign prior to the events.

Figure 13 – Contacts by venue

				Days	Est # initial contacts	Est # 'in-depth' contacts	Est # leaflets distributed
East of England	The Buttermarket	Ipswich	3rd-5th Mar	3	948	621	771
	Victoria Centre	Southend-on-Sea	9th-12th Mar	4	744	512	368
	Harlequin Centre	Watford	16th-19th Mar	4	1,500	870	916
	Queensgate	Peterborough	23rd-26th Mar	4	848	580	472
East of England Total				15	4,040	2,583	2,527
South West	The Galleries	Bristol	2nd-5th Mar	4	1,700	644	600
	Green Lanes	Barnstaple	10th-12th Mar	3	660	336	336
	Sovereign Centre	Bournemouth	16th-19th Mar	4	740	424	404
	Drake Circus	Plymouth	23rd-26th Mar	4	1,092	492	524
South West Total				15	4,192	1,896	1,864
Grand Total				30	8,232	4,479	4,391

Overall, only 149 appointment cards were distributed – which probably reflects the relatively small probability that an attendee to the roadshow would be both suffering relevant symptoms *and* choose to make a GP appointment in this way.

Nevertheless, the face to face events were deemed successful. Surprisingly, given the sensitivity of the subject matter, people were willing to share their experiences and talk to the events' teams about bowel cancer signs and symptoms. See section 5.7 for details of exit interviews that were carried out.

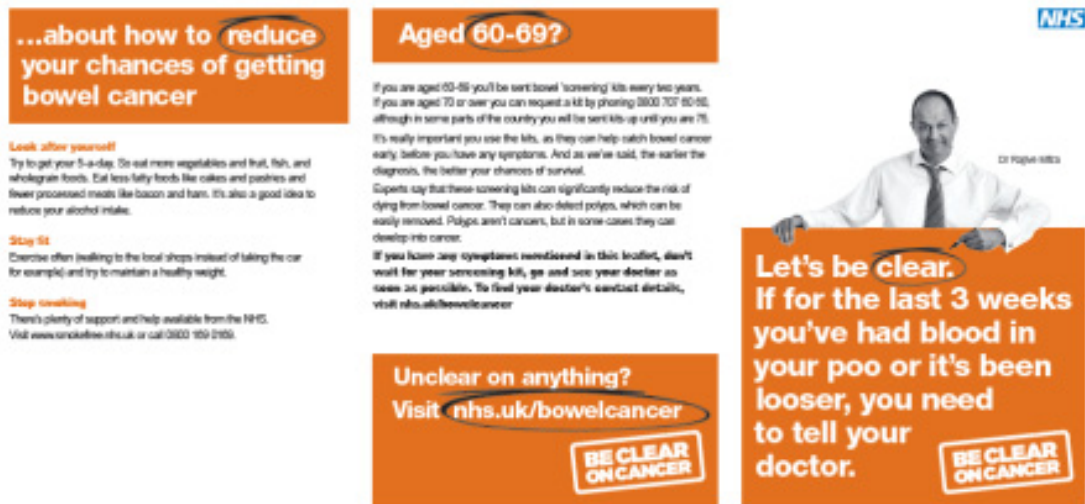
4.10. Leaflets and posters

Leaflets and posters were distributed via the following channels:

1. Events: 4,391 leaflets (see previous section)
2. GP surgeries: potentially 20,580 leaflets via the waiting room information service (30 leaflets mailed to 686 GP surgeries)
3. Publicity Register Mailing: a letter was sent to 12,172 health venues and local community organisations inviting them to order leaflets and posters
4. A total of 79,726 leaflets and 4,330 posters were ordered in total. These may have been as a result of the Publicity Register Mailing or non-commercial partnership activity (see 4.12 below).

In addition, poster and leaflet artwork was made available so that PCTs could print large quantities of materials themselves if required.

Figure 14 – Leaflet



4.11. Paid search driving visits to nhs.uk

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 bowel cancer. As well as the two regions, search activity was run in a “control” region (North West).

Search was purchased for keywords related to the campaign, so that a link to the campaign site would appear at the top of other search results, if someone searched for those keywords. Key points to highlight were:

1. High Click-Through Rate (CTR) average at 14.8% for the full campaign (few health campaigns have CTR this high)
2. Low Cost Per Click (CPC) at £0.36 (vs. £0.49 forecast)
3. 23,340 clicks were driven to the site

Looking by region, performance was better in the campaign regions. CTR was higher in the campaign regions than in the control region and CPC was lower.

Figure 15 – Paid search results

	Control	Campaign	
	North West	West and South West	East
Page impressions	61,949	50,634	45,063
Clicks	7,884	8,082	7,374
Click Through Rate	12.73%	15.96%	16.36%
Cost Per Click	£ 0.39	£ 0.35	£ 0.35

4.12. Visits to nhs.uk/bowelcancer (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/bowelcancer, which led people to a new, specific campaign information page on NHS Choices.

Figure 16 – nhs.uk/bowelcancer

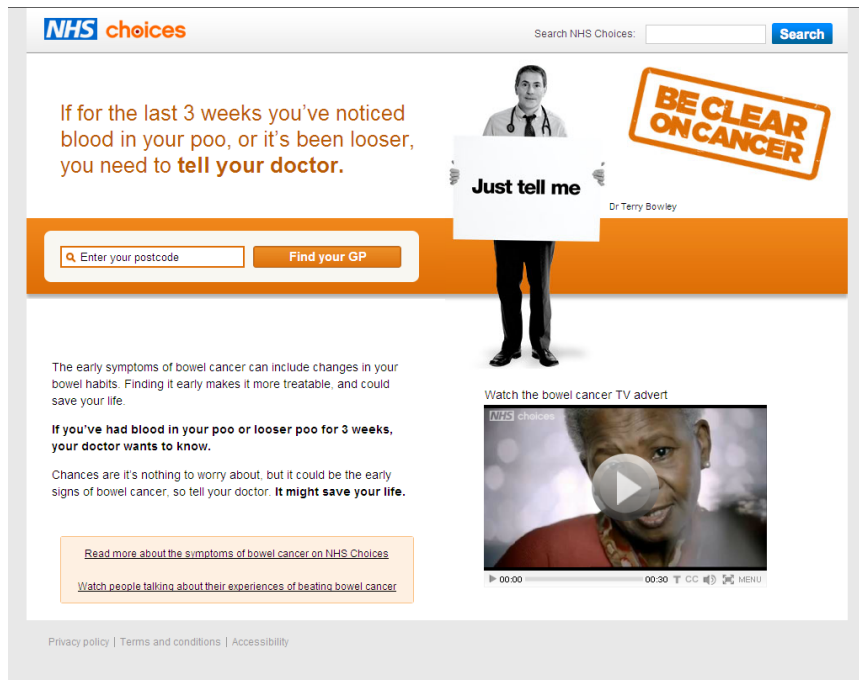
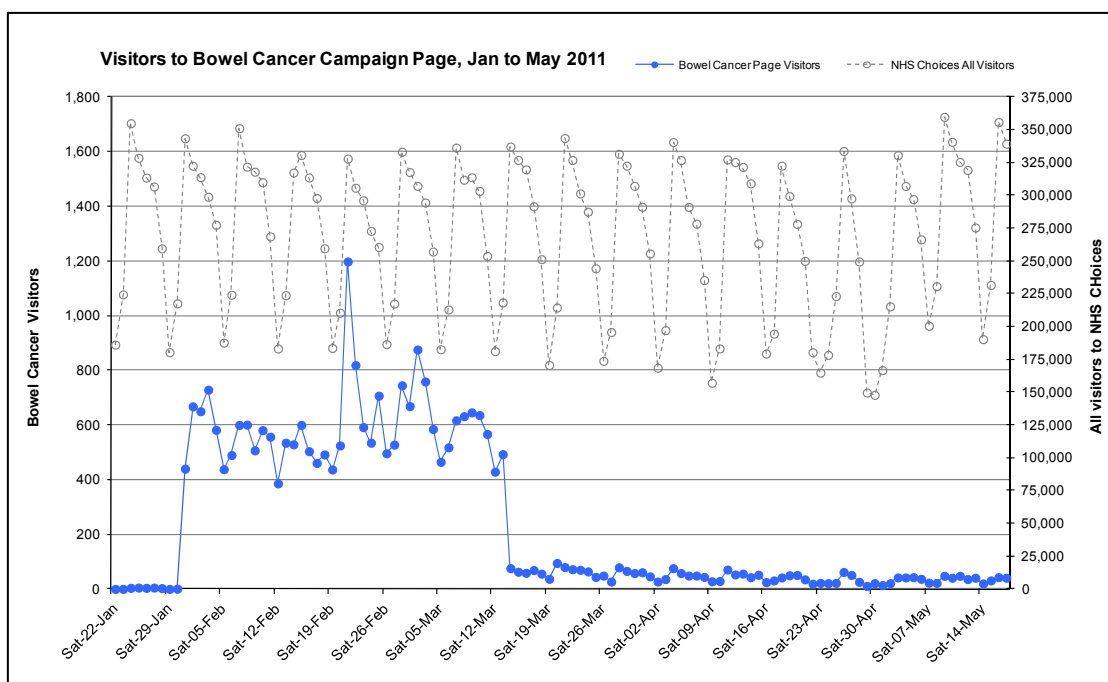


Figure 17 – Visits to the bowel cancer campaign page



Visitors to the site came at several hundred a day during the campaign and fell to a relatively low level soon after it finished. The number of visitors did not follow the usual weekly pattern seen by NHS Choices as a whole (high on Monday and falling to Saturday with a slight recovery on Sunday).

In total there were 24,088 visitors between 31st Jan and 13th March 2011 at an average of around 600 per day. These visitors made a total of 25,263 visits (a visitor could have made more than one visit). On average, people viewed 1.32 pages per visit and the *median* visit duration was 2 minutes. The *mean* visit duration, however, was 4 minutes 3 seconds. This suggests that a small number people spent quite a long time on the site compared with the majority who spent a couple of minutes.

Top 3 sources of visits to the site were:

1. Google.co.uk (68%);
2. Direct Traffic – typing in the URL (7%); and
3. nhs.uk (5%).

So the majority of visitors found the site through search. Top 5 search terms over the period are shown below:

Figure 18 – Search terms for bowel cancer

Top 5 organic search terms	Number of visits	Top 5 paid search terms	Number of visits
be clear on cancer	59	bowel cancer symptoms	4,811
bowel cancer advert	31	bowel cancer	4,104
nhs.uk/bowelcancer	30	symptoms of bowel cancer	1,135
blood in your poo advert	23	colon cancer	422
early signs of bowel cancer	15	blood in stool	391

Of the visits to the homepage, 599 (or 2% of all visits) led to the visitor reaching search results via the “find your GP” function. 240 of these (40%) went through to one of the GP profiles that were returned by the search.

Figure 19 – Searches from campaign site by PCT (top 20)

PCT of the postcode searched for (top 20)	Campaign Coverage	Visits	% of all Visits	Page Views
Devon PCT	Yes	30	5%	48
Norfolk PCT	Yes	27	5%	34
Berkshire West PCT	Yes	20	4%	37
Suffolk PCT	Yes	19	3%	31
Cornwall and Isles Of Scilly PCT	Yes	19	3%	33
Leeds PCT	No	18	3%	34
Cambridgeshire PCT	Yes	16	3%	19
Wiltshire PCT	Yes	15	3%	19
Milton Keynes PCT	No	14	3%	18
Northamptonshire Teaching PCT	No	12	2%	14
Bournemouth and Poole Teaching PCT	Yes	12	2%	18
Manchester PCT	No	11	2%	16
Bedfordshire PCT	Yes	11	2%	14
Swindon PCT	Yes	10	2%	14
Somerset PCT	Yes	10	2%	11
Gloucestershire PCT	Yes	10	2%	12
Lincolnshire Teaching PCT	No	9	2%	14
Bristol PCT	Yes	9	2%	14
Hampshire PCT	No	9	2%	14
Dorset PCT	Yes	8	1%	10

Only six of the top 20 PCTs in the postcode search were outside the main campaign regions, and four of these (Milton Keynes, Hampshire, Lincolnshire and Northamptonshire) could have been exposed to the advertising. This represents further evidence (in addition to the peak in visitors during the campaign) that the campaign was driving visitors to come to the site and they were not just visiting anyway.

In the period following the campaign (from 14th March to 17th May) the much smaller number of visits came mostly through by referral through nhs.uk (63%) rather than by direct traffic (14%) or search (9%). The spread of postcodes searched for also balanced more evenly between all regions as was not dominated by the target regions as it was during the campaign period.

It should be noted that NHS Choices has an existing (non-campaign) web page <http://www.nhs.uk/Conditions/Cancer-of-the-colon-rectum-or-bowel/Pages/Introduction.aspx> and that visitors are likely to have been driven to this page too, by the campaign. However, reporting on visitors to this site during the campaign period is not currently available. Planning for the rollout of the national campaign in 2012 should include working with NHS Choices to ensure that this data is available for comparison with the campaign site.

4.13. Clinical engagement

A systematic approach to clinical engagement was taken, delivered through the Cancer Networks, who were each allocated funding for this purpose from the Department of Health. The aim was to prepare clinicians (GPs and secondary care) for the potential increase in presentation with relevant symptoms. This shared with them:

1. campaign timing, communication activities, aims, messages, target groups;
2. presenting the local problem – why it mattered;
3. evidence base for the campaign;
4. impact and capacity;
5. resources and support; and
6. outcomes and evaluation.

DH worked with Public Health and GP Leads, and Medical Directors. Work was undertaken to ensure the campaign messages, materials and brands were understood. This included activities that were part of local awareness and early diagnosis work, and communications with Site Specific Groups (SSGs); primary care and public health; and other professionals. Communications were delivered through newsletters; mailings; websites; and PCT communication channels.

Clinical engagement was vital to the success of the campaign and should again be an integral part of a national awareness campaign.

4.14. Partnerships

A wide range of organisations throughout the regions supported the campaign:

1. Government departments (e.g. DWP/Job Centre Pluses; some regional tax offices);
2. Local authorities;
3. Citizen's Advice Bureaux;
4. Libraries;
5. Unions; and
6. Police authorities.

They supported the campaign in a variety of ways, including:

1. Displaying posters and distributing leaflets;
2. Promoting the campaign on websites, intranets and newsletters;
3. Face to face advice (e.g. in Peterborough, instructors delivering physical activity sessions to over 55s also talked to them about the campaign and bowel cancer symptoms);
4. Giving presentations and information at relevant events (e.g. a cancer network specialist spoke at an event in Norfolk for over 100 walk leaders who lead walks for over 55s);

5. Promoting the campaign through wider channels in their areas (e.g. South Somerset's Healthy Lifestyles Officers promoted the campaign to workplaces, Sheltered Housing Schemes and Active Living Centres within the area).

Commercial partnerships were also established in the pilot areas to help support and communicate the cancer early diagnosis message to partners' customers, members or employees during or just after the pilot. Partners and activities included:

1. Fitness Industry Association (FIA). Bespoke materials were sent out to 490 of their members (mainly leisure centres). Over 6,000 fitness professionals within the pilot areas were also supplied with a credit card signs and symptoms reminder.
2. Kimberly-Clark supported the campaign by distributing messages to employees within two of their sites. This activity was supported by their health and well being programme and reached approximately 500 employees.
3. Chemists and pharmacies were identified as a key audience for this campaign. Pharmacy bodies were notified of the campaign, who in turn notified their members, requesting that they order materials from the DH order line.

4.15. PR

DH announced the launch of the campaign with a press notice, together with Ministerial visits in both pilot areas. Coverage of the launch delivered 7,848,206 opportunities for the public to see mentions of the campaign (excluding Guardian and Telegraph online). The ITV lunchtime news ran an in-depth package on the launch day and the local BBC news channels included interviews with Ministers on the days of their visits.

5. Awareness, Knowledge and Intention

How many people saw or heard the campaign and what did they take out of it?

The bowel cancer pilot campaign was evaluated using three separate stages of research, conducted by TNS BMRB;

1. A regional pilot campaign evaluation survey among the 55+ population;
2. a survey of GPs across both pilot regions; and
3. a localised, on-site survey of face to face events.

The methodology and sample sizes for each were as follows:

1. Regional pilot survey

A pre and post campaign evaluation survey was conducted among the target audience of those aged 55 or older using a test (East of England and South West) and control area (rest of England) research approach. An in-home face to face omnibus survey was carried out across England, with ad hoc face to face fieldwork boosts in the East of England and South West pilot areas. Pre stage interviewing took place 4- 30 January 2011 and post stage from 21 March – 8 April of C2DEs aged 55+. Pre/post campaign interviews: 471/428 in control, 475/510 in South West and 490/475 in East of England.

2. GP survey

A test versus control area approach was undertaken using a telephone survey with GPs across England conducted only at the post campaign stage; 116 interviews in a control region (rest of England) and 228 in the two pilot areas. Sample was drawn from a health professional database and stratified by area and size of practice.

3. Face to face event survey

An on-site face to face survey was carried out with visitors following their participation in the event. Interviewing was conducted at all seven event locations across the two pilot areas; 126 interviews in South West event areas and 206 in East of England event areas.

The overall aims of the research were to understand the impact of the bowel cancer pilot campaign by measuring:

1. Campaign awareness, recognition of campaign activity, reaction to advertising and emotional engagement with the advertising
2. Awareness and knowledge of the signs and symptoms of bowel cancer
3. Beliefs and attitudes towards early diagnosis and barriers to presenting to the GP.
4. Claimed intention to act (present to GP) as a result of seeing or hearing the activity

5.1. Campaign awareness and recognition

Summary

Overall, there was higher awareness of general cancer advertising among the target audience in the pilot areas (7 in 10 vs. 6 in 10 in the control). When members of the target audience were asked which cancers had been covered by this advertising, bowel cancer became the most spontaneously mentioned cancer in the pilot areas following the campaign – indicating that the campaign “cut through” the noise of other similar advertising.

TV ads were the most cited source of cancer advertising in all three areas (followed by editorial and official sources) and mentions of TV advertising increased significantly in the pilot areas following the campaign. Similarly, GPs in the pilot area were significantly more likely to mention TV advertising as being the source of bowel cancer advertising they had seen or heard.

Nearly three quarters of (general public) respondents in the pilot areas recognised at least one of the ads when played or shown to them.

5.2. 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.

Around 7 in 10 of the public surveyed in the pilot areas were aware of general cancer publicity before the campaign started (74% in the South West, 70% in the East of England); significantly more than in the control area (62%), indicating an existing heightened awareness of this type of advertising in the pilot areas. Building on this, awareness increased significantly in the South West following the campaign to 80% (from 74%); however this level of increase was not seen for the East of England which only increased by two percentage points (up to 72%). There was no corresponding increase in awareness seen among the control (66%).

In both pilot and control areas, those aged 75 years and over were less likely to be aware of general cancer advertising or publicity than those aged 55 to 64 years, as were C2DEs. In the South West pilot area only, females were more likely to be aware than males of this type of activity (84% compared with 76%).

Respondents aware of any publicity relating to cancer were then asked to recall what type of cancer was featured in the advertising or publicity they were referring to. There is strong evidence to suggest that, in the pilot areas, the campaign had significantly cut through the noise of other cancer advertising and publicity. In the South West, mentions of bowel cancer activity doubled from a quarter (25%) to nearly a half (48%), with the same pattern occurring in the East of England (up from 20% to 46%). In the control area however, mentions of bowel cancer remained constant.

GPs were specifically asked about their awareness of different types of bowel cancer advertising or publicity, rather than general cancer advertising or publicity awareness as in the general public survey. Three quarters of GPs in the East of England (74%) and eight in ten in the South West (79%) said that they had recently seen or heard bowel cancer advertising or publicity, significantly more than those practising in the control area (46%).

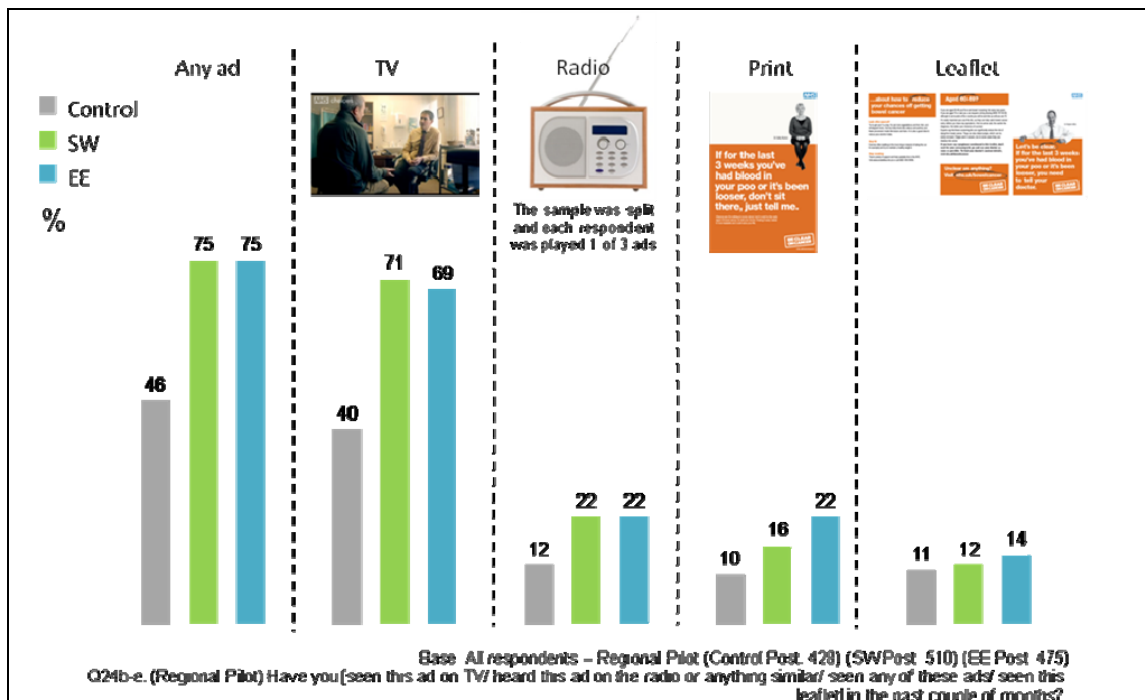
5.3. Prompted recognition of campaign elements

At the post stage, respondents were shown the various campaign executions and asked if they recognised them. Each respondent was shown the 30 sec TV advert, print advert, leaflet and one of three variations of the 30 sec radio ads.

When shown the Be Clear on Cancer ads on screen, three quarters of respondents in both pilot areas recognised at least one of the adverts shown to them, compared with around half in the control areas, clearly indicating a stronger campaign cut through in the pilot areas.

As shown below, TV advert recognition was predominantly driving the total recognition in the pilot areas, with the majority of respondents in both areas recognising the TV advert; 7 in 10 in the pilot areas and 4 in 10 in the control. This indicates that the other campaign elements predominantly acted to support the TV advert, extending reach only slightly beyond what the TV advert achieved in isolation.

Figure 20 – Recognition of Be Clear on Cancer campaign



In the South West, women, people aged 55 to 64 years old and those from the C2DE social group were more likely to recognise the TV ad. In the East of England only those in the DE social grades were more likely compared with the AB grades to have seen the TV ad (74% compared with 61%).

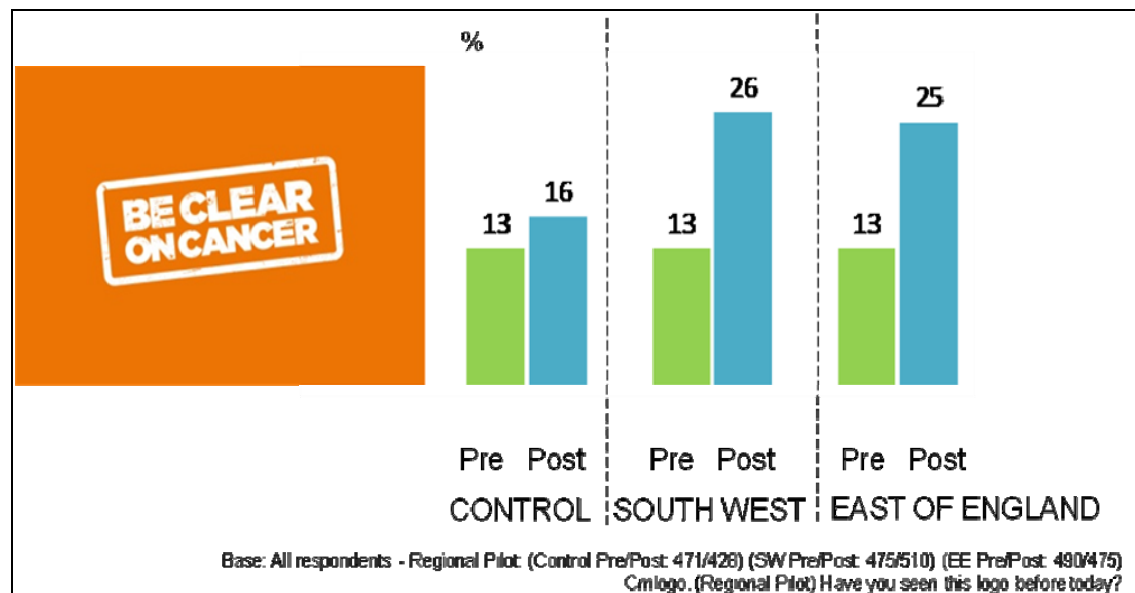
In terms of support media, there were similar recognition levels in the pilot areas for the radio ads (22% for both areas) and these respondents were significantly more likely to have heard a radio ad than in the control areas. Two in ten in the East of England (22%) recognised the print ad, as did 16% in the South West. The leaflet had the lowest level of recognition, suggesting it had less reach than other media and was less memorable.

When it was described to them, twice as many GPs in the pilot areas (over a third) were aware of the Be Clear on Cancer campaign compared with the control area. Of those who had heard of the campaign in the pilot areas, the majority correctly believed that the Department of Health was responsible. This reflects the success of direct communication to GPs in advance of the campaign.

Logo recognition

As shown below, prior to the campaign being launched, the Be Clear on Cancer campaign logo was 'recognised' (false awareness) by around one in ten respondents in all three areas. However, following the campaign, recognition doubled in the pilot areas – but not among the control – again, showing a clear impact of the campaign itself.

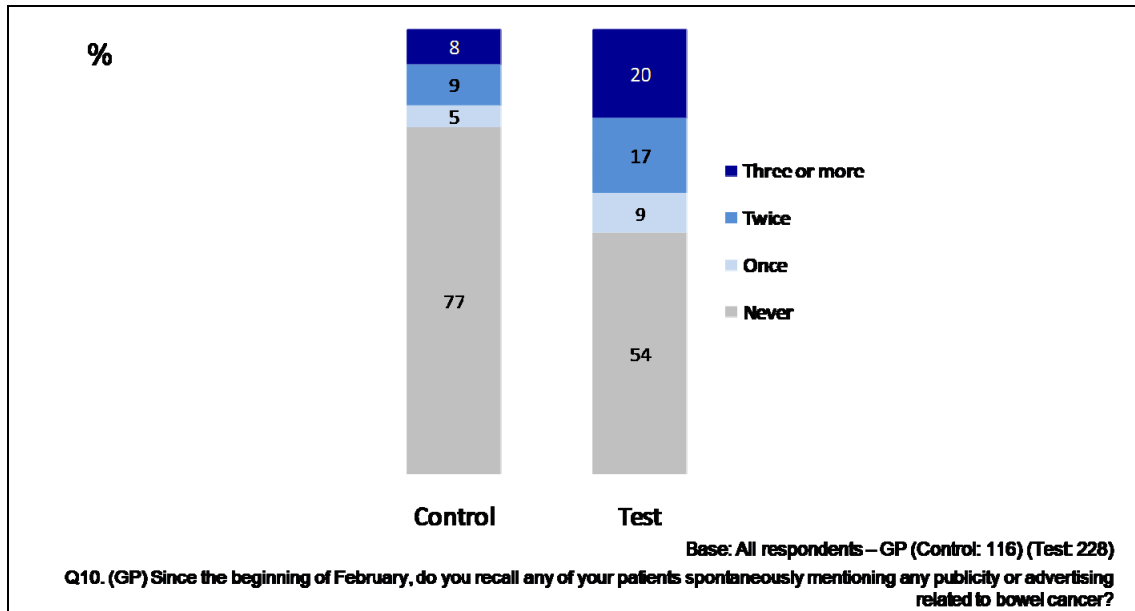
Figure 21 – Recognition of Be Clear on Cancer logo



Mentions of the campaign to GPs

GPs were asked to recall how many (if any) of their patients had spontaneously mentioned any publicity or advertising related to bowel cancer during an appointment over the past couple of months (i.e. since the campaign launched).

Figure 22 – Patients spontaneously mentioning the campaign to GPs



Over twice as many GPs in the pilot areas compared with the control said patients had spontaneously mentioned bowel cancer publicity or advertising to them over the past couple of months (46% versus 21% in the control area), with most saying three or more had done so (20% versus 8% in the control area).

5.4. Campaign communication

The campaign was effective in communicating the main messages. After being shown the Be Clear on Cancer ads on screen during the interview, around half of respondents in both pilot areas and the control area spontaneously said they thought the main message of the ads was to see their GP or to get checked out if they had any symptoms or concerns. This is the key message of the campaign, indicating a clear and succinct message delivery.

Following this, fewer people in the pilot areas (around two in ten) mentioned that the main message was to raise awareness of bowel cancer or the treatment that is available, double the proportion of those believing this in the control area.

The third most mentioned message that respondents took from the ads was to act fast to get an early diagnosis (25% in the South West, 19% in the East of England, 19% in the control area). This was also a key campaign message and therefore reflects a positive campaign cut through.

Below are some examples of what respondents spontaneously mentioned:

“Go to your GP if in any doubt. Don’t be embarrassed.”

“Go and see your doctor as soon as you have symptoms, better chance of curing. Don’t be embarrassed or afraid”

“Driving home the message about contacting/seeing your doctor early should any of these symptoms persist.”

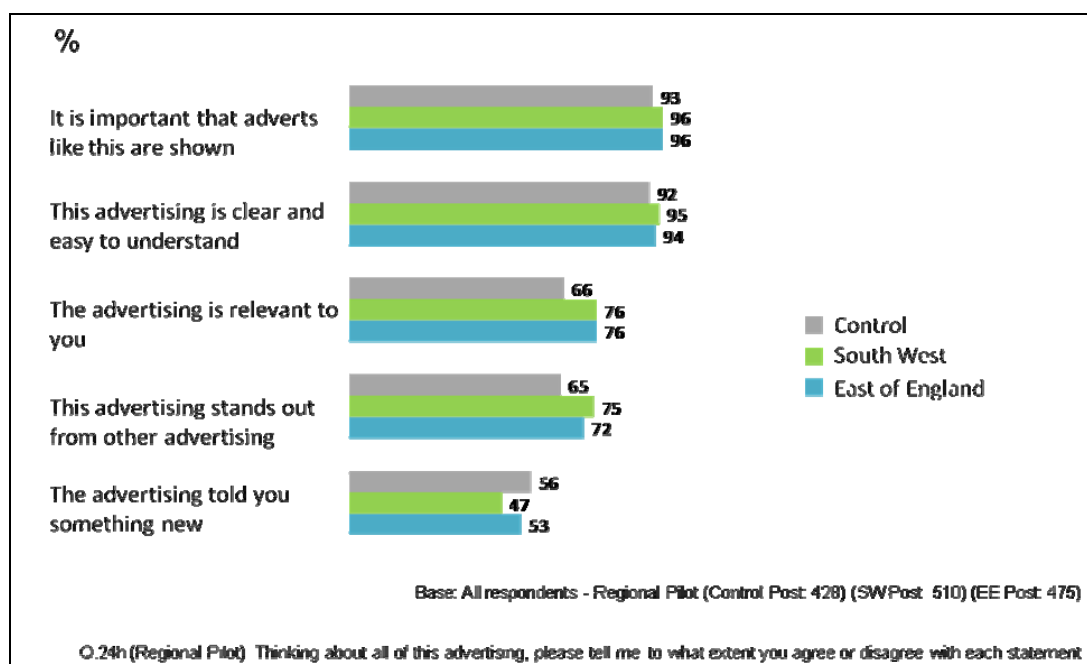
“Make me aware of the symptoms enough for me to do something about it”

GPs who had heard of the Be Clear on Cancer campaign were asked for their top of mind comments about the campaign.

A range of top of mind answers were given by GPs in response to the campaign with most being generally positive, for example, stating that the campaign was ‘good’, ‘necessary’ and ‘a good idea to raise awareness’. There were some (fewer) negative comments made by some GPs, some mentioned concern around the campaign increasing demands on the system, others mentioned that it might cause unnecessary concern. Encouragingly, around one in five in all areas stated they thought that the campaign should be ongoing.

There was a clear appreciation of this campaign among both the general public and GPs as shown below. Among the general public, agreement was near universal across both pilot and control areas that *‘it is important that ads like these are shown’*, (96% in the pilots and 93% in the control) which is a very positive result. Nine in ten of those GPs who were aware of the campaign also agreed that it is important that ads like this are shown (89%).

Figure 23 – Reaction to the advertising



Similarly there was a high level of agreement on “this advertising is clear and easy to understand (92% in the control area and 95%/94% in the pilot areas). Encouragingly, the majority of GPs in the pilot areas agreed that the advertising would make patients more confident about talking to their GPs about this kind of thing (88%).

Around a half in both the pilot areas and the control agreed that the “advertising told them something new”. The fact that there is little difference between the pilot and control areas might be due to existing local activity on cancer signs and symptoms.

5.5. Knowledge of signs and symptoms

Spontaneous knowledge

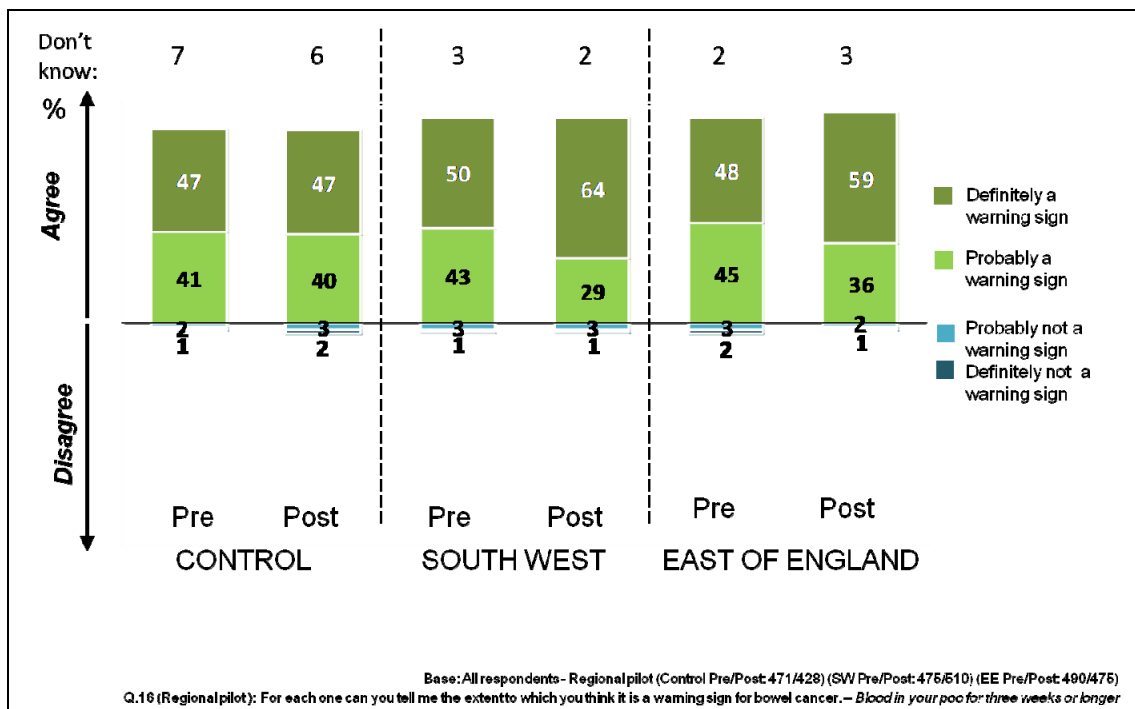
Following the campaign, there were significant increases in mentions of two of the symptoms that were a focus of the campaign. Mentions of blood in stools rose to 38% (from 19%) and mentions of loose bowel movements increased from 4% to 20% showing a clear campaign impact on knowledge. Additionally, respondents saying they did not know any signs or symptoms also dropped (25% to 13%).

At both stages the 55-64 age group were more likely than the 75+ age group to spontaneously mention blood in stools as a sign of bowel cancer (22% vs. 8% at the pre stage, 39% vs. 28% at the post). Following the campaign, men were less likely than women to say loose bowel movements (14% vs. 25%).

Prompted knowledge

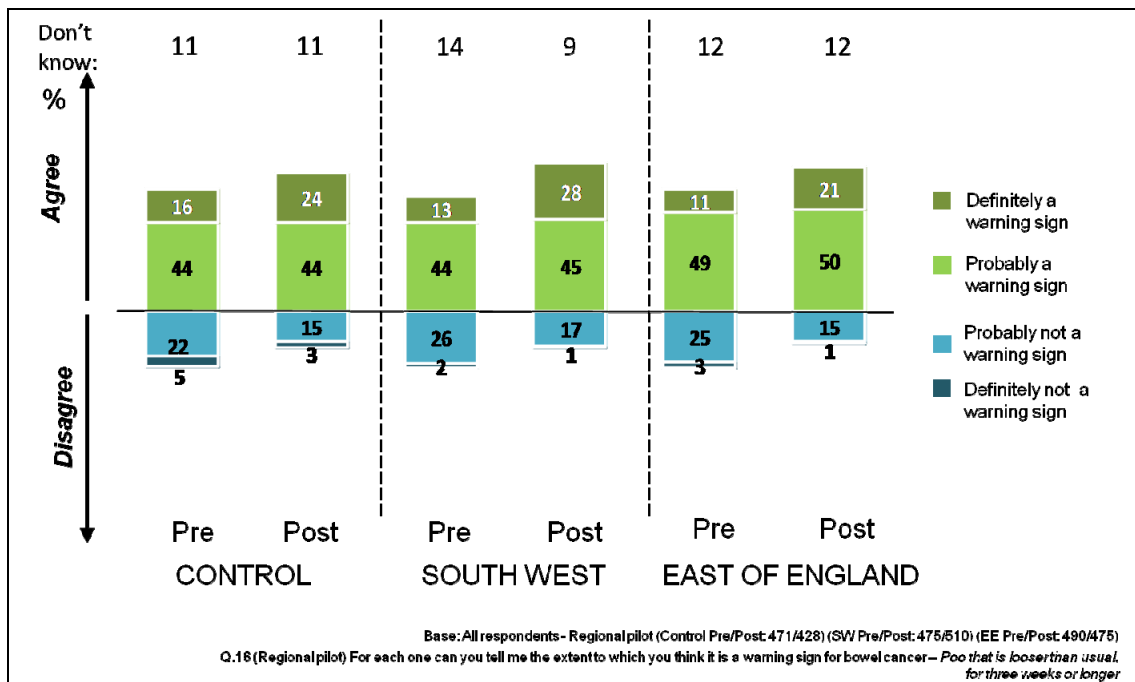
To explore the knowledge further, respondents were shown a list of the signs and symptoms of bowel cancer and asked how much of a warning sign of bowel cancer each one was. The charts that follow describe changes in knowledge of the two key signs and symptoms mentioned in the campaign – ‘Blood in your poo for three weeks or longer’ and ‘Poo that is looser than usual for three weeks or longer’.

Figure 24 – Extent symptom is a warning sign: blood in poo for three weeks or longer



There was generally high agreement that blood in your poo was a warning sign of bowel cancer in all areas before the campaign, with high agreement that it was definitely a warning sign at around a half for each area.

Figure 25 – Extent symptom is a warning sign: poo that is looser than usual



Prior to the campaign, around six in ten respondents agreed that poo that is looser than usual (another key campaign message) was a warning sign or symptom in both the control area and pilot areas. See chart that follows. After the campaign there were significant increases in those agreeing it was definitely a sign or symptom in all three areas, although the increase was smaller in the control area, and corresponding significant decreases in those agreeing that it was probably not a warning sign across the board.

In the South West, women (32%) were more likely to say it was definitely a warning sign than men (23%) as were C2DEs (32% compared with 24% of ABC1s).

5.6. Attitudes and beliefs

The campaign drew on the Health Belief Model to examine changes in attitudes and beliefs as a precursor to behaviour change. The Be Clear on Cancer campaign sought to persuade people of the benefits of early presentation, to minimise barriers to doing so, and to give people the knowledge and skills to know when action is appropriate (developing self efficacy), as well as acting as a cue to action to prompt them to go to their GP when at risk.

There was near universal disagreement in both pilot and control areas with the statement 'My GP/doctor would be difficult to talk to about the signs and symptoms of bowel cancer' with a slightly higher proportion strongly disagreeing in the East of England (52% to 58%).

Other barriers in both the pilot and control areas included overcoming embarrassment, not wanting to waste their doctors' time, belief (or lack of) that early diagnosis helps and fear of treatment, which were all generally not acknowledged to

be issues to prevent early presentation both before and after the campaign, with only limited movement seen in these views post campaign.

The campaign appeared to have most impact on self-efficacy, increasing the public's ability to present for diagnosis by building up their knowledge of symptoms and confidence in that knowledge, with perceptions around the benefits of early diagnosis and breaking down barriers to presenting to a GP being less affected.

People were also more confident that they would notice a sign or symptom of bowel cancer following the campaign, with significant increases seen in both regions. People were also increasingly confident in their responses when asked what were the signs and symptoms of bowel cancer in both of the pilot areas, with the proportion saying they were very confident increasing significantly (17% to 25% in the South West and 15% to 21% in the East of England).

Finally, the campaign aimed to act as a cue to action and was perceived by the majority of respondents to be a good overall prompt to visit their GP if they spotted any signs and symptoms of bowel cancer. However when asked how long they would take to make an actual appointment if they found a symptom they thought might be a sign of bowel cancer, the majority of respondents (60%) said they would contact their GP on the same day, with no change following the campaign. This suggests the campaign did not noticeably change claimed intended behaviours in terms of speeding up a visit to the doctor.

However this result is likely to represent the idealised view of how people think they would act and does not necessarily follow through in reality, in particular for an issue like cancer where emotional factors can override rational actions. The better measure of whether the campaign has acted as a cue to action is the rate of presentations which is covered in section 6 of this report.

5.7. Feedback from roadshow events

The face to face events were a localised element of the broader pilot campaign, and were evaluated separately. Most respondents attending an event at one of the eight locations surveyed in the pilot areas believed the aim of them was to raise awareness. The majority stated they were to raise awareness of bowel cancer specifically, more so in the South West (47% compared with 28% in the East of England).

Visitors were generally very engaged with the events, with seven in ten (72%) in the South West and six in ten (60%) in the East of England undertaking more than one activity. Most respondents spoke to one of the team, but those in the South West were more likely to talk in depth to both non-health professionals (36% compared with 23% in the East of England) and nurses (12% compared with 5% in the East of England) indicating a deeper level of engagement undertaken with events in this pilot area. In each area, talking to a non-health professional, both briefly and in depth, were most frequently cited as the most useful activity by respondents.

Overall, there was a very positive reaction to the events, particularly in the South West. There was near universal agreement that the events were a good way to promote a serious cause. The events were well targeted, especially in the South West with seven in ten agreeing strongly that the events were aimed at them (70% compared with 41% in the East of England).

A high proportion of respondents (approx 60% in both pilot regions) intended to take action as a result of the event, with 'talking to others about it' being the most likely outcome. Encouragingly, peoples' confidence in noticing a bowel cancer symptom was significantly increased as a result of attending an event (71% to 91% in the South West compared with 54% to 92% in the East of England).

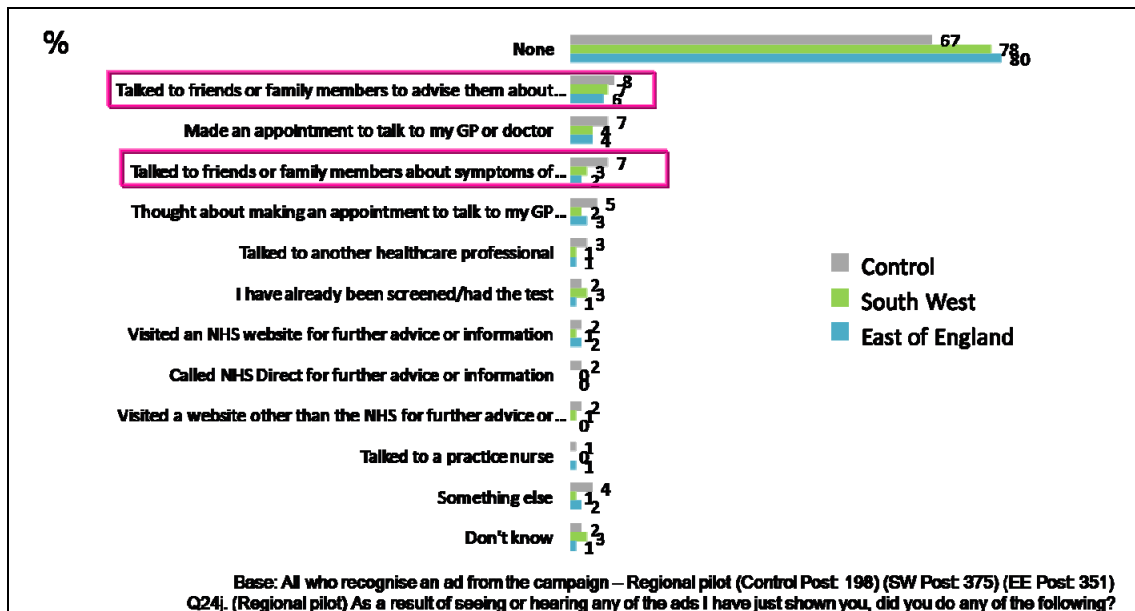
The general pattern of responses in the South West suggests that there may have been a factor (for example event location or staff), unique to events in the South West which made these events more successful.

5.8. Claimed action taken

It must be borne in mind that it may not be relevant for large numbers of people to immediately take action or present to their GPs following the campaign – as they are unlikely to have symptoms. So at the point research was carried out even small proportions of respondents stating claimed intention to act was positive.

To assess the impact of the campaign, all respondents who recognised one of the ads were asked if they had taken any action.

Figure 26 – Claimed intention to act due to campaign



In line with the view above, the majority of respondents said they had not taken any action following the campaign (78% in the South West and 80% in the East of England compared with 67% in the control area).

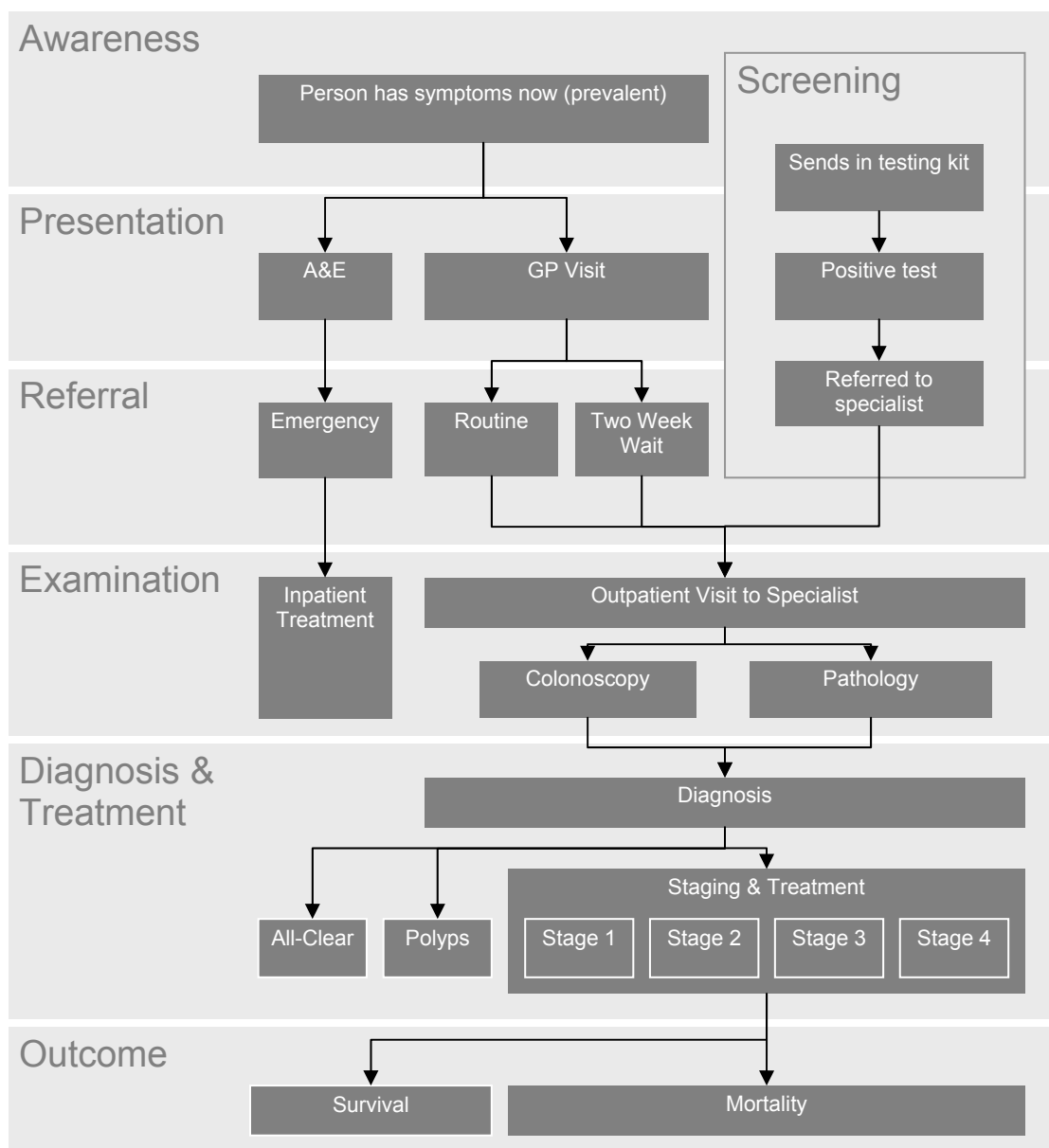
Of those who said they had taken action as a result of the campaign, the most likely response was to talk to friends or family members to advise them about the information in the ads, mentioned by about one in twenty to one in ten for each area (6-8%).

A further one in twenty in both the pilot areas said that they had made an appointment to talk to their GP or doctor as a result of seeing the ads and a slightly lower proportion had thought about making an appointment. Again, although these are small proportions, you would not expect it to be relevant for large numbers to present immediately after the campaign, so even these small proportions are positive.

6. Presentation, Referral, Examination, Diagnosis and Outcome

The aim of the bowel cancer awareness pilot was to drive earlier presentation and ensure earlier access to diagnosis and treatment. As shown below, a patient who presents with symptoms may arrive in secondary care through various routes. Examination, diagnosis and treatment may then take several weeks or months, depending on the complexity of investigation and treatment needed. This means that some patients who presented with symptoms as a result of the pilot campaigns that ran from January to March 2011 may still not be represented in registry data.

Figure 27 – Bowel Cancer Diagnosis Pathway



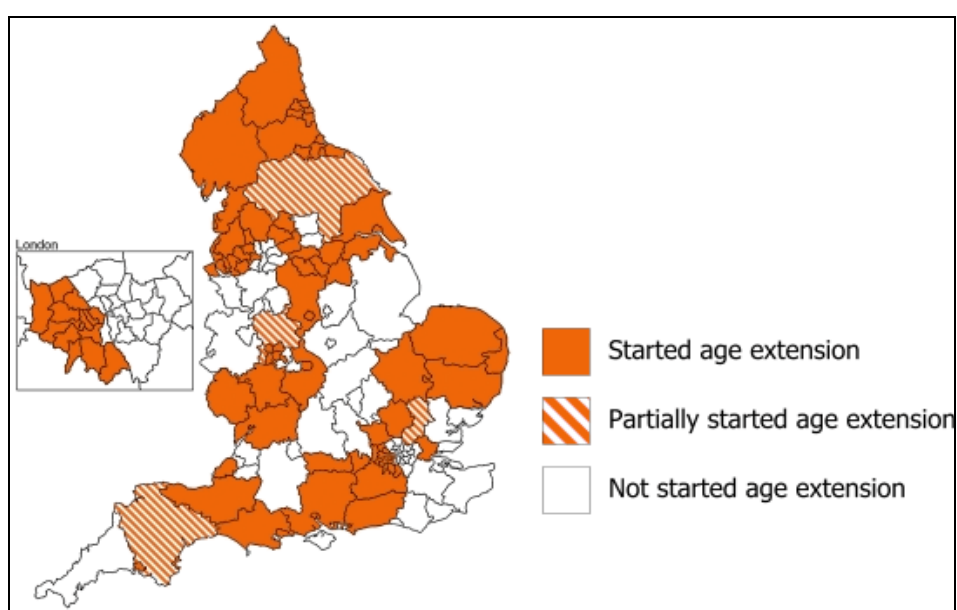
6.1. Uptake of screening

How screening works

Since 2006 the NHS Bowel Cancer Screening Programme has offered screening every two years to all men and women aged 60 to 69. People over the age of 70 have been able to request a screening kit by calling a phone helpline.

However, from April 2010, the age range was extended to invite men and women up to their 75th birthday. By October 2011, 32 of the 58 local screening centres in England had started inviting this extended population.

Figure 28 – Extent of age extension for bowel cancer screening



Five hubs are responsible for coordinating the programme in their region and each one works with up to 20 local screening centres to send out faecal occult blood (FOB) test kits; to analyse samples; and to despatch results.

The screening centres provide endoscopy services and specialist nurse clinics for people receiving an abnormal result. Screening centres are also responsible for referring those requiring treatment to specialists at their local hospital.

Hypotheses

The campaign, although not primarily aimed to do so, could have had an impact on screening. This impact is most likely to be seen in:

1. Levels of screening uptake;
2. Time to return screening kits; and
3. Age and gender profiles of those taking up screening and returning kits.

Data sources

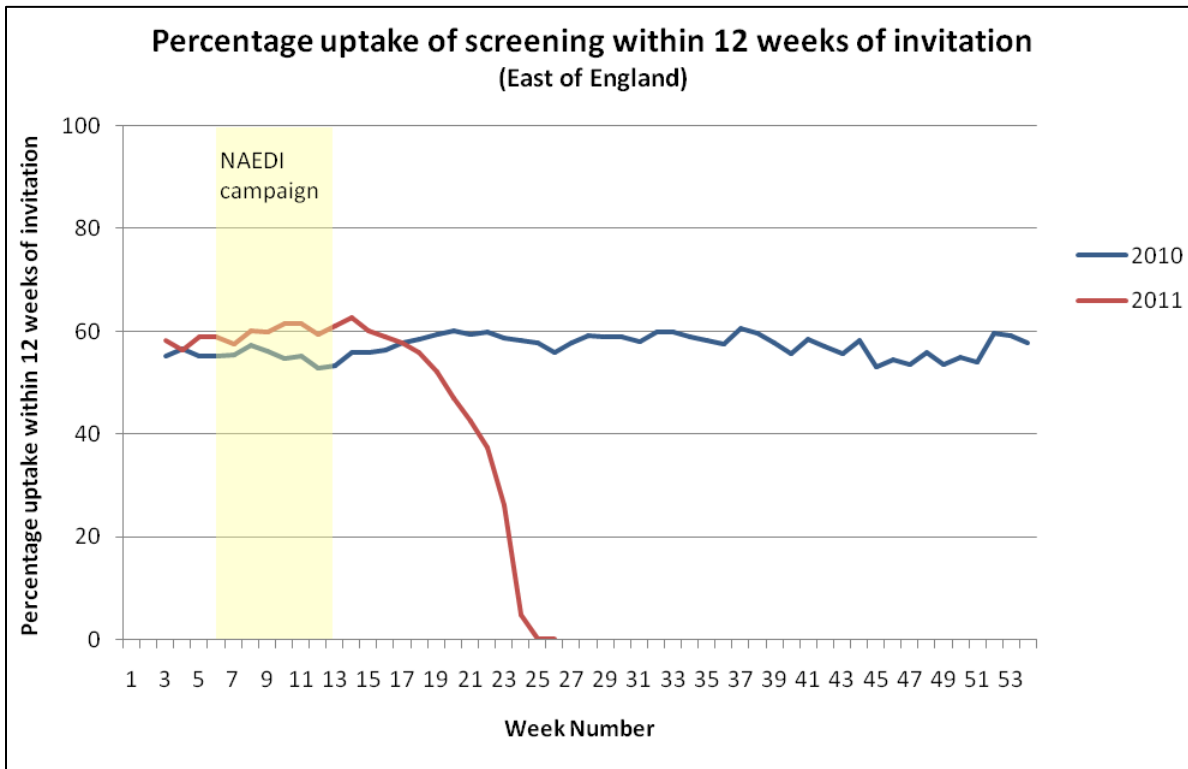
Data from the East of England Quality Assurance Reference Centre (QARC) from the National Bowel Screening Computer System was used for the analysis by East of England Cancer Registration and Information Centre (ECRIC).

Levels of screening uptake

“Uptake” is defined by NHS Bowel Cancer Screening Programme (BCSP) as the proportion of people invited to take part in screening who return their kits and get a definitive test result. There is no time limit for the return of kits in this definition which means kits returned months after being sent are included within the national definition.

East of England Quality Assurance Reference Centre (QARC) data show that 90% of those who return kits do so within 12 weeks. For this reason it was decided for this analysis to define uptake as “the percentage of those invited to take part in screening who had completed and returned kits within a fixed 12 week period”. Therefore anyone sent a kit more than 12 weeks before the start of the campaign and who chose to return it after seeing the campaign, will not have been included. The figures are therefore likely to be lower than if using the national definition.

Figure 29 – Percentage uptake of bowel cancer screening within 12 weeks of invitation 2010 compared to 2011

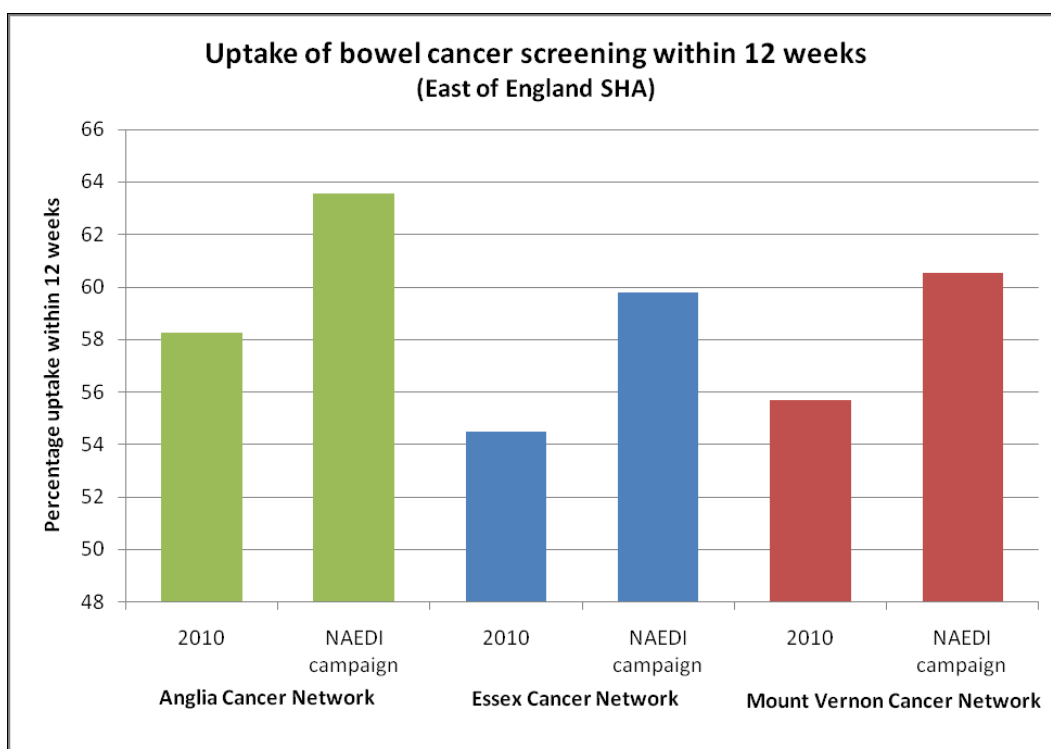


The graph compares uptake within the same defined 12 week period between January and December 2010 and January and March 2011.

It can be seen that although there is some variation in uptake rates, overall the rate in 2010 remained fairly constant. Uptake in 2011 before, during and after the campaign is higher than 2010 levels overall and for the same period. There appears to be an increase during and immediately after the campaign period. The tail off in 2011 is due to data still being collected for these 12 week periods.

Overall uptake of screening within the campaign periods was 5% higher for each of the three Cancer Networks in the East of England (see graph below).

Figure 30 – Average uptake of bowel cancer screening within the same 12 week period in 2010 and 2011, by Cancer Network within the East of England

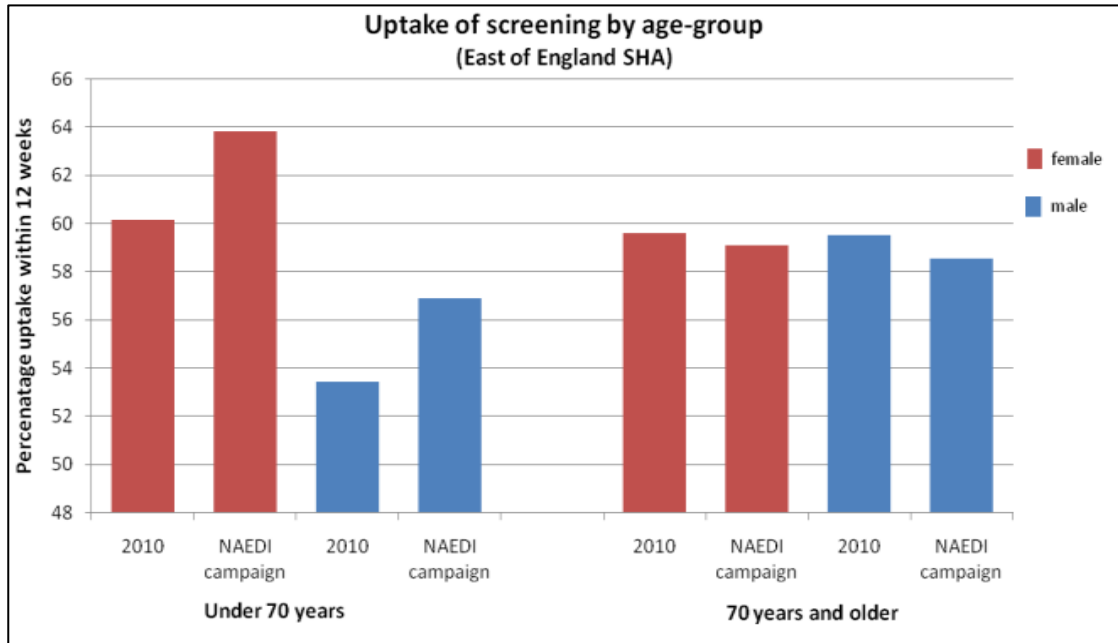


Age and gender distribution of those taking up screening

The graph that follows shows the uptake of screening in 2010 compared to the campaign period, by age group and gender. It can be seen that uptake by those aged 70 years and older remained fairly constant. However uptake by those aged 60 – 69 years increased during the campaign.

Uptake increased by similar proportions for both men and women during the campaign – 3.4% for men, 3.7% from women. However the proportion taking up screening remained higher for women.

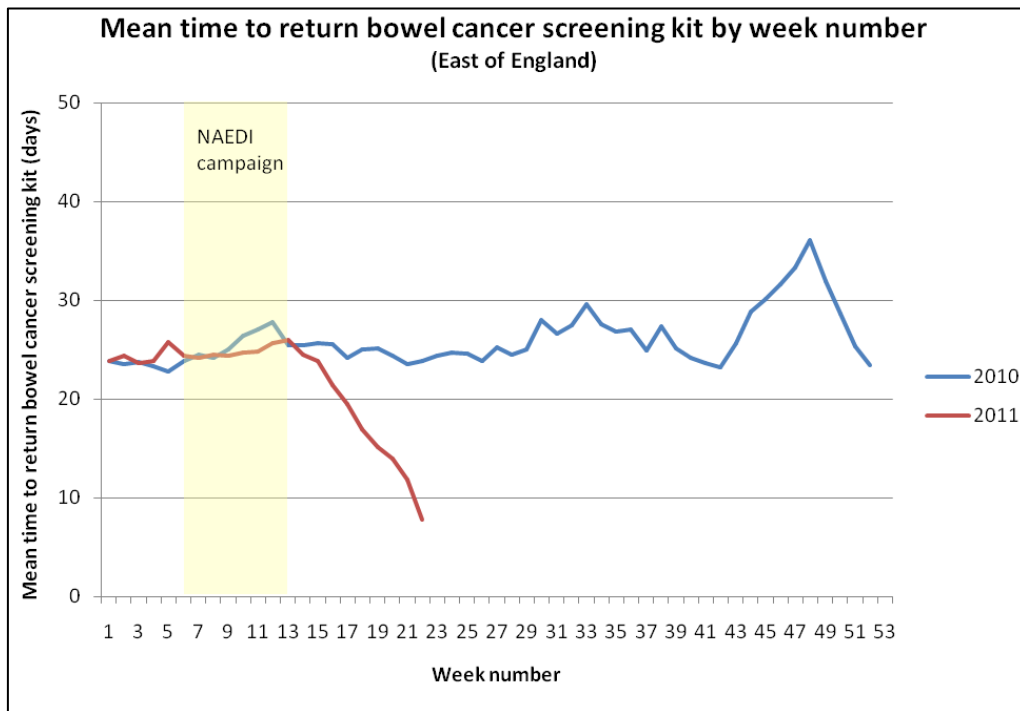
Figure 31 – Uptake of screening by age group and sex, 2010 and campaign period 2011



Time taken to return screening kits

The graph below shows the average number of days taken to return the screening kit for all those who returned the kit during 12 weeks of initial invitation, compared to 2010 data.

Figure 32 – Mean time to return screening kit

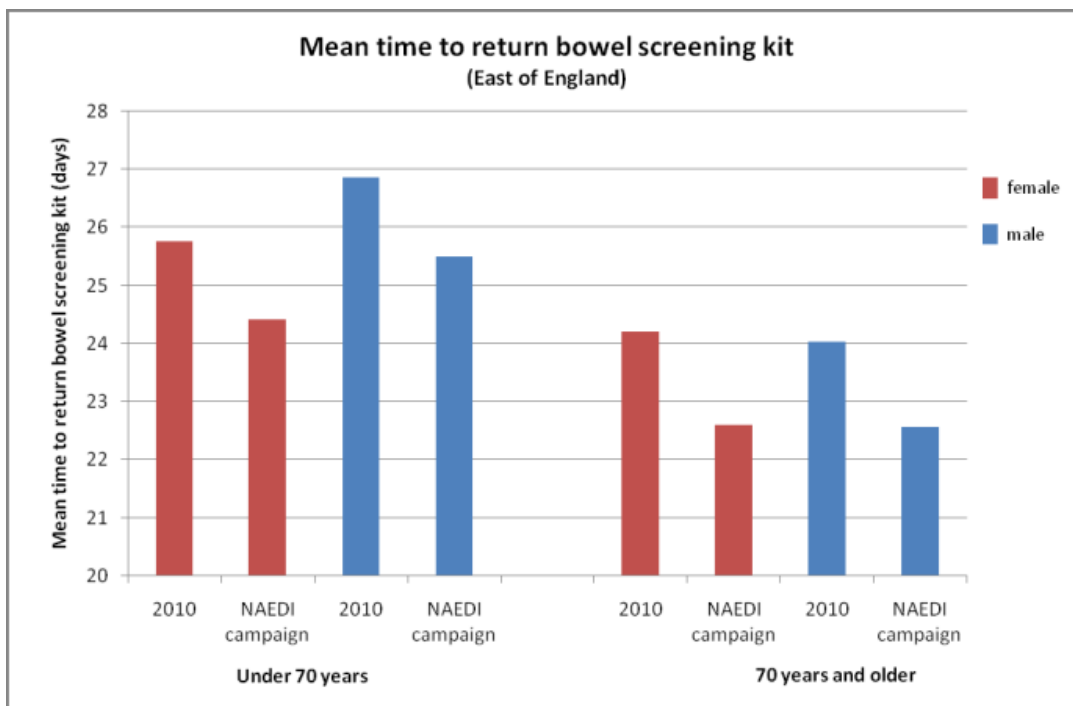


This shows considerable variation in time taken in the latter part of 2010 which might be related to the adverse weather conditions making it more difficult for people to return kits.

It also shows that the time taken to return kits before and during the campaign was broadly similar to the previous year, though with a decrease in time taken for kits sent out during the campaign. The decrease following the campaign reflects the delay in capturing the data. It is not possible from this data to determine whether the campaign will have any effect on later months.

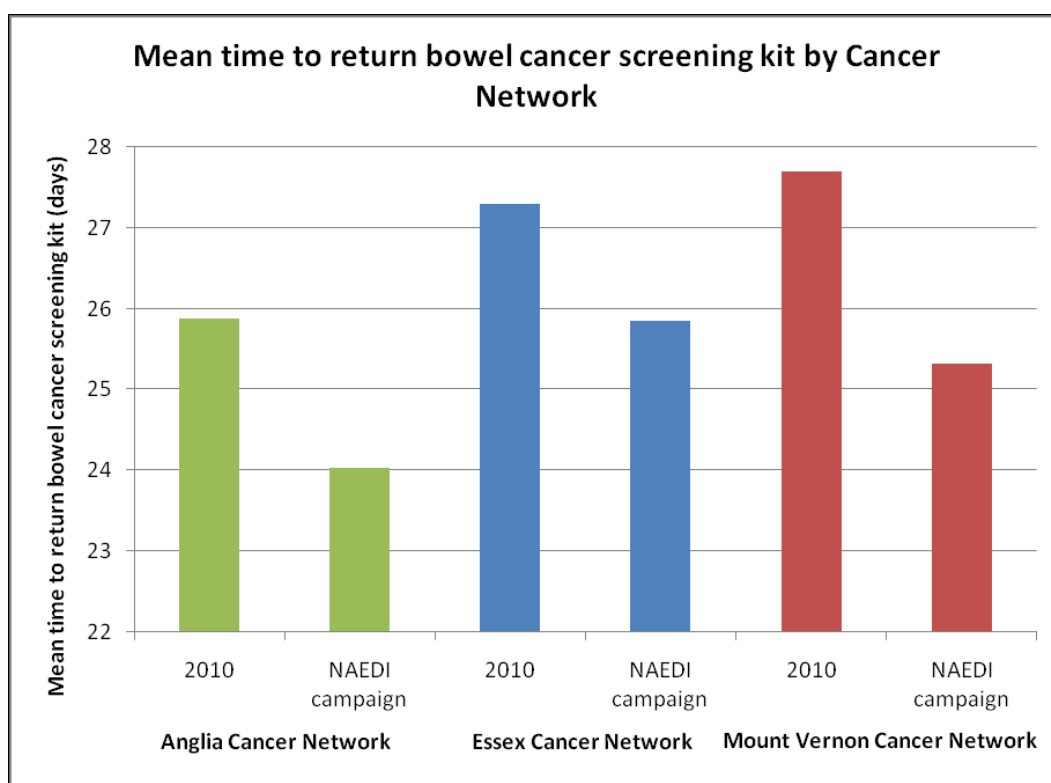
Return times varied by age and sex. Return times during the campaign for those 70 years and older were shorter (i.e. returned more quickly) than for those 60 -69 years old (see graph below).

Figure 33 – Mean time to return screening kit by age and gender



While the time taken to return kits varied by Cancer Network for both control and campaign periods, all three Networks saw a small decrease in the time taken to return kits during the campaign period (see graph that follows)

Figure 34 – Mean time to return screening kit by cancer network



Conclusions

Analysis of East of England screening data shows that the campaign did have a small impact on screening:

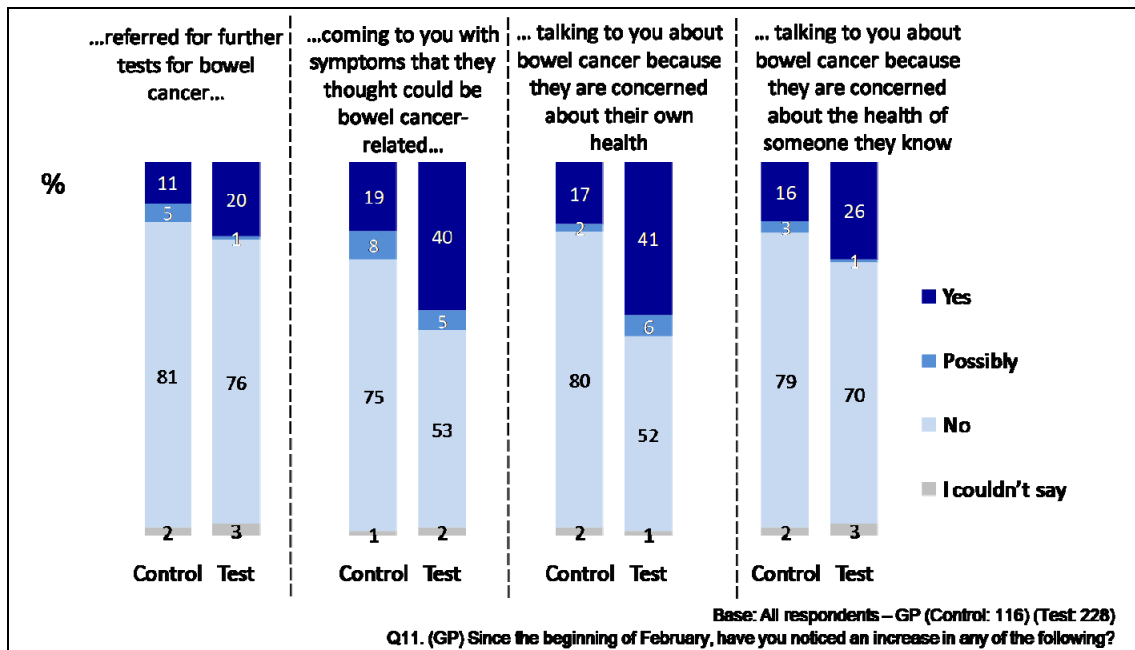
1. There was a 5% increase in uptake of screening in each of the Cancer Networks in the East of England during the campaign period.
2. This increase was primarily in those aged 60 – 69 years old, with similar levels of increase in both men and women in this age group.
3. There was a reduction in time taken to return screening kits sent out during the campaign, with kits set to those aged 70 years and over being returned faster than those 60 – 69 years old. This reduction was seen across all three Cancer Networks.
4. Overall there have been improvement in the metrics measured that seem to be directly associated with the campaign period.

It is reasonable to conclude therefore that there has been a small positive direct impact on the Bowel cancer screening programme as a result of the campaign.

6.2. GP perception of presentations

One way to evaluate the impact of the campaign is to examine whether GPs thought that they had seen an increase in the number of patients referred for further bowel tests, presenting to them with bowel cancer symptoms or talking about bowel cancer.

Figure 35 – GP perception of increases in patient visits



One in five (20%) of GPs in the pilot areas said that they had seen an increase in the number of patients referred for further bowel cancer tests over the months following the campaign, twice as likely as in the control area (11%). Similarly, over twice as many GPs in the pilot area said they had seen an increase in the numbers of patients coming to them with symptoms (40% versus 19% in the control area) and talking to them about bowel cancer because they were concerned about their own health (41% versus 17% in the control area).

Although not statistically significant (but still following the same trend) more GPs in the pilot areas said they had seen an increase in the number of patients talking to them about bowel cancer because they were concerned about the health of someone they know compared with the control area (26% compared with 16%).

Male GPs in the pilot areas were significantly more likely than their female counterparts to report both an increase in patients presenting with bowel cancer related symptoms (48% compared with 31%) and an increase in patients talking to them about their own health concerns about bowel cancer (50% compared with 29%).

Overall the findings suggest that there had been an increased amount of presentations to GPs in the pilot areas as a result of the campaign, which implies campaign impact on behaviour.

6.3. Actual GP presentations

During 2011, the National Cancer Action Team (NCAT) worked with three Cancer Networks to develop a way of measuring the number of GP presentations for bowel cancer symptoms in order to see how this changed during the campaign period. This section of the report is based upon the final report of this project, which was delivered by IT specialists Mayden³.

When a patient visits a GP practice that uses a type of computer system called EMIS, the GP records the symptoms reported by the patient for that visit using a "Read code". Although many codes were considered as part of the analysis, the [descriptions of the] codes of most interest for this project were:

1. Rectal bleed;
2. Change in bowel habit;
3. Loose stools; and
4. Diarrhoea.

Mayden measured the number of visits with these Read codes from a sample of 74 GP practices between February and April in 2010 and again in 2011. The sample came from:

1. Mount Vernon Cancer Network (MVCN): 23 practices – 8 of which were covered by the TV element of the campaign only in 2011. The remaining 15 were not exposed to the campaign.
2. Anglia Cancer Network (ACN): 21 practices all covered by the East of England campaign in 2011.
3. Avon, Somerset and Wiltshire Cancer Network (ASWCN): 30 practices all covered by the South West campaign in 2011.

Key questions the analysis tried to answer were:

1. Did coding behaviour change from 2010 to 2011? (e.g. were GPs more likely to use some terms than others in 2011 compared with 2010?)
2. Did visits with relevant symptoms increase from 2010 to 2011?
3. Did visits increase by more in practices covered by the campaign?
4. Did the age distribution of patients with relevant symptoms change?
5. Did the gender distribution of patients change?

The value of this study, which is the first of its kind, should be noted. The investment of time, effort and money by NCAT and the Networks has produced the first accurate analysis of symptom-specific GP visits. Without this study it would not be known if this was possible and the evaluation team would be unable to estimate the impact of the bowel cancer campaign activity on GP workload. The following section of the report will draw upon the study to answer the key questions above and to estimate impact.

³ See "bowel cancer awareness campaign evaluation final version 2.2"

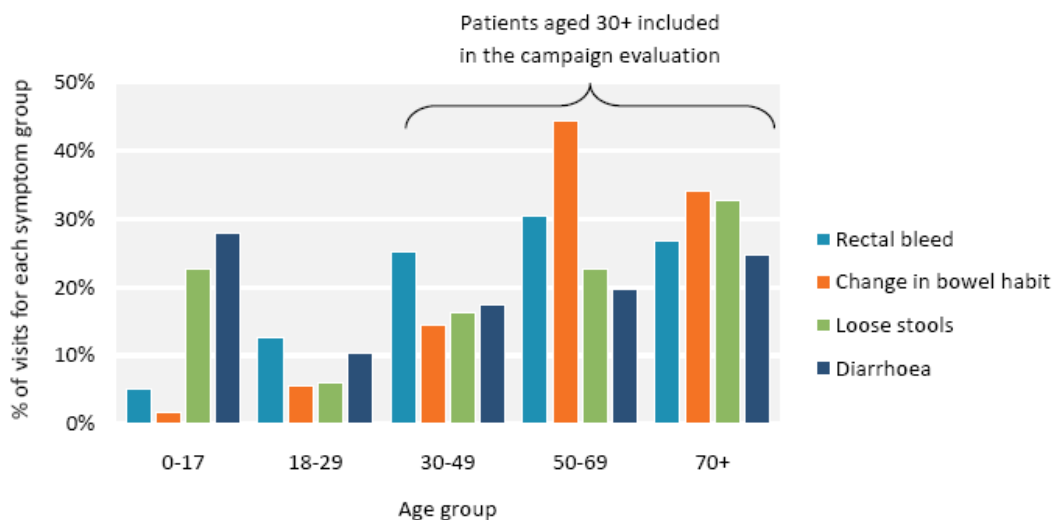
Adjustments for age prior to analysis

The data collected from practices in 2010 and 2011 included patients of all ages, however the campaign was targeted at the over 55s. For the purposes of the campaign evaluation, patients under the age of 30 were excluded as they are at very low risk of bowel cancer. Where no age group is indicated in any table that follows, it should therefore be assumed that “GP visits” means “GP visits, of patients aged over 30, for the symptoms described”.

Figure 36 – Age profile of all visits

Symptom group	GP Visits					Total
	0-17	18-29	30-49	50-69	70+	
Rectal bleed	294	730	1,461	1,768	1,551	5,804
Change in bowel habit	48	151	387	1,195	916	2,697
Loose stools	418	111	299	417	605	1,850
Diarrhoea	4,572	1,690	2,842	3,225	4,069	16,398
Total	5,332	2,682	4,989	6,605	7,141	26,749

Symptom group	% of total					Total
	0-17	18-29	30-49	50-69	70+	
Rectal bleed	5.1%	12.6%	25.2%	30.5%	26.7%	100.0%
Change in bowel habit	1.8%	5.6%	14.3%	44.3%	34.0%	100.0%
Loose stools	22.6%	6.0%	16.2%	22.5%	32.7%	100.0%
Diarrhoea	27.9%	10.3%	17.3%	19.7%	24.8%	100.0%
Total	19.9%	10.0%	18.7%	24.7%	26.7%	100.0%



Among all visits with the four relevant Read codes, the over-30s accounted for around 70% of visits and the over-50s for around 51% of all visits.

Looking specifically at the over-30s, the over-50s account for 73.4% of visits by over-30s (derived from the figures in the first table, above).

Adjustment for days in month and holidays

Adjusting visits each month for the number of days available and taking into account bank holidays (e.g. the extra bank holiday in April 2011) provides a more direct comparison of activity between 2010 and 2011. Therefore, in any table that follows, “Adjusted GP visits” have been used where possible.

Did coding behaviour change from 2010 to 2011?

Analysis of the changes in the four key Read codes suggests that coding behaviour could have changed in 2011 compared with 2010.

The total figures for all three networks at first show a very large percentage increase in “loose stools” (+141.1%); and a modest percentage fall in “diarrhoea” (-13.3%). However, in terms of number of visits, these almost cancel out (the increase in visits with “loose stools” is 237 and the fall in visits with “diarrhoea” is 269).

Figure 37 – Adjusted GP visits (total across all three networks)

Symptom Group	Adjusted GP visits (Feb - Apr)		Difference	
	2010	2011	Visits	% diff
1. Rectal bleed	857	1,103	246	28.7%
2. Change in bowel habit	418	679	261	62.4%
Subtotal (1+2)	1,275	1,782	507	39.8%
3. Loose stools	168	405	237	141.1%
4. Diarrhoea	2,028	1,759	- 269	-13.3%
Subtotal (3+4)	2,196	2,164	- 32	-1.5%
Campaign symptoms (1+2+3)	1,443	2,187	744	51.6%
All symptoms	3,471	3,946	475	13.7%

This suggests that it is possible that GPs – either through their own awareness of the campaign or through the language used by patients – could have exchanged the code “Loose stools” for the code “Diarrhoea” during early 2011. For this reason, in the analysis that follows, comparisons of visit data have been made using each of the combinations of symptoms identified above.

An alternative explanation is that visits in general declined and the decline in the use of the “Diarrhoea” Read code can be attributed to this. Adjusted visits for a group of control symptoms (Migraine, Headache, Depressive Episode and Depressed) fell from 9,108 to 8,255 – a fall of 9.4%. Each individual symptom fell by between 6% and 24%.

Did visits with relevant symptoms increase from 2010 to 2011?

It is clear that visits with relevant symptoms have increased between 2010 and 2011, regardless of the method used to choose the most relevant Read codes. The three Read codes most associated with the campaign were:

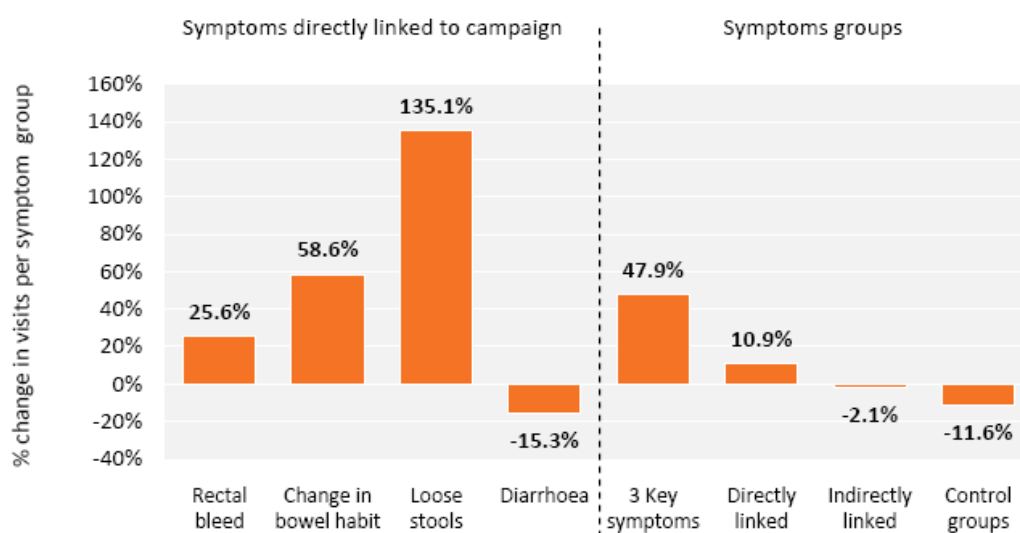
1. Rectal bleed = “blood in poo”;
2. Change in bowel habit = “going more often”;

3. Loose stools = “looser poo”).

Total visits for these Read codes went up from 1,443 to 2,187 (744 additional visits or an increase of 51.6%). Even if increases in “Loose stools” are partly attributable to a change in coding habits, visits where “Rectal bleed” or “Change in bowel habit” were recorded rose by 507 or 39.8%.

In order to ensure that any increase in visits was likely to be due to the campaign and not due to a general increase in all GP visits, Mayden examined changes in a variety of other Read codes in addition to those directly relevant to bowel cancer. This showed that while visits where patients reported the specific symptoms relating to bowel cancer increased from 2010 to 2011, visits where patients reported other, less related symptoms, declined.

Figure 38 – Change in actual visits by symptom group



Did visits increase more in practices covered by the campaign?

Mount Vernon Cancer Network (MVCN) was only partly exposed to the campaign but visits with relevant symptoms still increased from 2010 to 2011. Visits recording any of the three key campaign symptoms were up 20.7% and visits recording either rectal bleed or change in bowel habit were up by 19.3%.

Figure 39 – Adjusted GP visits (Mount Vernon Cancer Network)

Symptom Group	Adjusted GP visits (Feb - Apr)		Difference	
	2010	2011	Visits	% diff
1. Rectal bleed	255	297	42	16.5%
2. Change in bowel habit	102	129	27	26.5%
Subtotal (1+2)	357	426	69	19.3%
3. Loose stools	63	81	18	28.6%
4. Diarrhoea	619	538	- 81	-13.1%
Subtotal (3+4)	682	619	- 63	-9.2%
Campaign symptoms (1+2+3)	420	507	87	20.7%
All symptoms	1,039	1,045	6	0.6%

Within MVCN, it was possible to split out visits to practices likely to have been covered by the TV campaign from those unlikely to have been reached. It should be noted that the reach of TV is difficult to determine, so this analysis should be treated with some caution. The analysis was only carried out for the three key campaign symptoms and shows that visits increased by 14.5% in the “No TV” practices but by 40.2% in the TV practices.

Figure 40 – Adjusted GP visits by TV coverage (MVCN)

Campaign symptoms (1+2+3)	Adjusted GP visits (Feb - Apr)		Difference	
	2010	2011	Visits	% diff
TV (2011 only)	102	143	41	40.2%
No TV	318	364	46	14.5%
Total	420	507	87	20.7%

It is not appropriate to treat this data as a 2 x 2 contingency table and carry out statistical tests (such as the Fisher or Chi-square tests) because the “treatment” (exposure to TV) was only administered to the test group in 2011 and not in 2010.

It may therefore be concluded that in a sample of 8 practices exposed to TV, visits for the three key campaign symptoms rose by more than in a sample of 15 practices where there was no TV, but it is difficult to extrapolate this result further.

Anglia Cancer Network (ACN) was fully exposed to the campaign. Visits recording any of the three key campaign symptoms were up 82.1% and visits recording either rectal bleed or change in bowel habit were up by 61.1%. Note that there was less evidence of a change in coding behaviour in this network as use of the diarrhoea code itself remained almost unchanged.

Figure 41 – Adjusted GP visits (ACN)

Symptom Group	Adjusted GP visits (Feb - Apr)		Difference	
	2010	2011	Visits	% diff
1. Rectal bleed	261	367	106	40.6%
2. Change in bowel habit	150	295	145	96.7%
Subtotal (1+2)	411	662	251	61.1%
3. Loose stools	42	163	121	288.1%
4. Diarrhoea	588	593	5	0.9%
Subtotal (3+4)	630	756	126	20.0%
Campaign symptoms (1+2+3)	453	825	372	82.1%
All symptoms	1,041	1,418	377	36.2%

Avon, Somerset & Wiltshire Cancer Network (ASWCN) was also fully exposed to the campaign. Visits recording any of the three key campaign symptoms were up 50.0% and visits recording either rectal bleed or change in bowel habit were up by 36.9% (see table that follows).

Figure 42 – Adjusted GP visits (ASWCN)

Symptom Group	Adjusted GP visits (Feb - Apr)		Difference	
	2010	2011	Visits	% diff
1. Rectal bleed	341	439	98	28.7%
2. Change in bowel habit	166	255	89	53.6%
Subtotal (1+2)	507	694	187	36.9%
3. Loose stools	63	161	98	155.6%
4. Diarrhoea	821	628	- 193	-23.5%
Subtotal (3+4)	884	789	- 95	-10.7%
Campaign symptoms (1+2+3)	570	855	285	50.0%
All symptoms	1,391	1,483	92	6.6%

Comparing the three networks, the increases in the three key campaign symptoms were greater in the two networks fully exposed to the campaign. The increase was greatest in Anglia.

Figure 43 – Comparison of networks (3 key symptoms)

Campaign symptoms (1+2+3)	Adjusted GP visits (Feb - Apr)		Difference	
	2010	2011	Visits	% diff
<i>Network</i>				
MVCN	420	507	87	20.7%
ACN	453	825	372	82.1%
ASWCN	570	855	285	50.0%
Total	1,443	2,187	744	51.6%

Similarly, the increases in just rectal bleed and change in bowel habit are greater in the networks exposed to the campaign. Again, Anglia showed the greatest increase.

Figure 44 – Comparison of networks (rectal bleed + change in bowel habit only)

Symptoms 1+2 only	Adjusted GP visits (Feb - Apr)		Difference	
	2010	2011	Visits	% diff
<i>Network</i>				
MVCN	357	426	69	19.3%
ACN	411	662	251	61.1%
ASWCN	507	694	187	36.9%
Total	1,275	1,782	507	39.8%

In conclusion: there is evidence that GP visits with relevant symptoms increased more in areas exposed to the campaign.

Did the age distribution of patients with relevant symptoms change?

The objective of the campaign was to raise awareness of the signs and symptoms of bowel cancer among over 55s, so it is interesting to see whether the age distribution of patients with relevant symptoms changed from 2010 to 2011. One way to look at this in the Mayden data is to examine the proportion of visits made by those aged 50+ and carry out a z-test for the difference in proportions between two samples.

Figure 45 – Proportion of visits by those aged 30+ made by those aged 50+

Symptom Group	% of GP visits by 50+		z-test	
	2010	2011	P-value	Significant?
1. Rectal bleed	69.9%	67.2%	0.1022	No
2. Change in bowel habit	84.7%	84.2%	0.4083	No
Subtotal (1+2)	74.7%	73.7%	0.2514	No
3. Loose stools	78.6%	75.9%	0.2502	No
4. Diarrhoea	73.1%	70.3%	0.0276	Yes
Subtotal (3+4)	73.5%	71.4%	0.0539	No
Campaign symptoms (1+2+3)	75.2%	74.1%	0.2285	No
All symptoms	74.0%	72.4%	0.0629	No

For most groups of key symptoms, it looks at first as though the proportion of visits by those aged 50+ has fallen, but in nearly all cases the fall is not statistically significant when subjected to a z-test. The only exception is diarrhoea.

Another way to look at age distribution for the three main symptoms is as follows:

Figure 46 – Visits by age group, all networks

Campaign symptoms (1+2+3)	Adjusted GP visits (Feb - Apr)		Difference	
	2010	2011	Visits	% diff
<i>All networks</i>				
30-49	358	567	209	58.4%
50+	1,085	1,620	535	49.3%
Total	1,443	2,187	744	51.6%

Again, it looks as though age group has affected the increase in visits (visits increased by 58.4% for 30-49s as opposed to 49.3% for those aged 50+). However a Fisher exact test on the table returns a p-value of 0.4598⁴, so in fact there is no significant evidence that the proportional increase was different between age groups (even though the absolute increase is larger in the over-50s).

Looking individually at each network, the one exception to the overall finding is Anglia, where the increase for those aged 30-49 was much bigger than the increase for those aged 50+ (the p-value for the table of visits was 0.0198).

In conclusion, there is little evidence that the campaign led to more presentations by one age group than another; with the exception of Anglia, where more patients in the 30-49 group visited their GP with relevant symptoms.

⁴ Use <http://research.microsoft.com/en-us/um/redmond/projects/mscompbio/FisherExactTest/>

Did the gender distribution of patients change?

Analysing the gender distribution for the three key symptoms, the proportional increase in activity was slightly greater for men than for women, but overall gender did not have a significant impact on visits for the three key symptoms from 2010 to 2011 (p-value for the table was 0.5190 using a Fisher exact test)

Figure 47 – GP visits for three key symptoms by gender

Campaign symptoms (1+2+3)	Adjusted GP visits (Feb - Apr)		Difference	
	2010	2011	Visits	% diff
<i>All networks</i>				
Male	686	1,064	378	55.1%
Female	757	1,122	365	48.2%
Total	1,443	2,186	743	51.5%

Carrying out the same analysis for each of the networks, it can be seen that there was some variation between genders but, again, it was not statistically significant⁵.

Another way to look at gender is to consider the proportion of visits that were made by, say, females in 2010 and compare it to the proportion in 2011⁶. It is possible to do this by each symptom and by symptom groups. For the three key symptoms the proportion of visits by females has not changed significantly (it fell from 52.5% to 51.3% but the p-value was 0.2501). This is in line with the finding above.

Figure 48 – Proportion of visits made by females

Symptom Group	% of GP visits by females		z-test	
	2010	2011	P-value	Significant?
1. Rectal bleed	51.0%	46.7%	0.0290	Yes
2. Change in bowel habit	56.2%	57.0%	0.6012	No
Subtotal (1+2)	52.7%	50.6%	0.1270	No
3. Loose stools	50.6%	54.4%	0.7980	No
4. Diarrhoea	62.1%	57.7%	0.0030	Yes
Subtotal (3+4)	61.2%	57.1%	0.0028	Yes
Campaign symptoms (1+2+3)	52.5%	51.3%	0.2501	No
All symptoms	58.1%	54.2%	0.0003	Yes

However, for rectal bleed and diarrhoea, the fall in the female proportion was significant in each case – with the effect that the fall in the female proportion for all four symptoms was also significant (58.1% down to 54.2%). Any fall in the female proportion of course implies a rise in the male proportion – and suggests that more men may have responded to the campaign than women.

In conclusion: based on analysis of the three key symptoms, there was no evidence that the campaign led to an increase in GP visits by one gender more than another.

⁵ Tables and p-values available separately

⁶ Any fall in the proportion of females implies a rise in the proportion of males and vice-versa

There is some evidence that more men responded to the campaign than women with one of the key symptoms (rectal bleed) and a related symptom (diarrhoea).

Projections for national activity

Extrapolating the results of this study to the population of England is possible but is of course subject to significant margins of error. While it may have been a comprehensive analysis among a small sample of GP practices, it is not able to predict exactly how thousands of individuals across thousands of practices might react to a national campaign in 2012.

An estimate of the number of additional GP visits with relevant symptoms that could be expected, if the same results had been observed nationally, has been constructed as follows:

1. The registered population in the sample practices is estimated at 640,000 (see the Mayden report).
2. The number of extra adjusted visits, from 2010 to 2011, for the three key campaign symptoms (rectal bleed, change in bowel habit and loose stools) was calculated to be 744 for the sample practices (from Feb to Apr). This equates to an average of $744/74 = 10$ extra visits per practice.
3. The extra visits per member of GP population in the sample is then $744/640,000 = 0.001163$.
4. The registered GP population in England is 51,573,132⁷. So the England-wide estimate for extra visits is $51,573,132 \times 0.001163 = 59,954$.
5. There are estimated to be 8,230 practices in England⁸. So the estimate represents $59,954/8,230 = 7$ extra visits per practice over the three months.

The Mayden report does show the actual changes in visits with the three key symptoms by GP practice, for the sample of 74 practices. This shows that there was considerable variation. The most extreme examples were a practice that saw 58 additional visits (an increase of 223.1%) and another that saw 13 fewer visits (a fall of 50%). The mean change was an increase of 9 visits and the median change was an increase of 6.5 visits – but the mean, for example, has a standard deviation of 15 visits. It is possible to compare the percentage changes in visits, to attempt to remove size of practice as a factor, but this also shows a large variation across practices.

This serves to underline the difficulty of projecting the results of the study beyond the sample practices, particularly in terms of a number of extra visits per practice. However, it can be seen that the increase in attendances in primary care was small in comparison with overall workload.

Future campaigns should continue to involve early engagement with the clinical community to ensure that primary care is ready to adapt to the potential fluctuations in demand that may occur as a result of the campaign.

⁷ <http://www.ic.nhs.uk/pubs/gpregpop10>

⁸ http://www.bma.org.uk/press_centre/pressgpps.jsp

Overall conclusions

From this research with 74 GP practices, we have seen that:

1. It is possible that GPs – either through their own awareness of the campaign or through the language used by patients – exchanged the code “Loose stools” for the code “Diarrhoea” during early 2011. However, it is also possible that the use of the “Diarrhoea” code fell in line with visits for non-campaign-related symptoms.
2. It is clear that visits with relevant symptoms have increased between 2010 and 2011, regardless of the method used to choose the most relevant Read codes.
3. There is evidence that GP visits with relevant symptoms increased more in areas exposed to the campaign.
4. There is little evidence that the campaign led to more presentations (proportionally) by one age group than another; with the exception of Anglia, where more patients in the 30-49 group visited their GP with relevant symptoms.
5. Based on analysis of the three key symptoms, there was no evidence that the campaign led to a proportional increase in GP visits by one gender more than another. There is some evidence that more men responded to the campaign than women with one of the key symptoms (rectal bleed) and a related symptom (diarrhoea).

Finally, we have also seen that the work carried out by NCAT, the networks and Maiden to analyse Read code data in this way was extremely valuable. Firstly, it allowed evaluation of the impact of this bowel cancer pilot campaign, but secondly it opened the way for such analysis to be used to evaluate other interventions in future.

6.4. Referrals to see a specialist (2ww)

This section currently only includes statistics relating to periods covered by published official (commissioner based) and national (provider based) statistics so as to minimise the risk of pre-empting a future publication.

The All Cancer Two Week Wait (2WW) was introduced in 2000 to ensure that everyone referred urgently by their GP with suspected cancer would be able to be seen by a specialist within two weeks of that referral being received by the secondary care provider.

The preferred terminology for referrals from primary to secondary care for suspected lower GI cancer made under the 2WW criteria is “urgent GP referral”. This is reflected within this report, as “urgent GP referral (2WW)”. Where the term 2WW is used alone, this should be understood to mean the same thing.

It was anticipated that if a person presented to the GP as a result of the campaign; the GP was concerned that the symptoms might be cancer; and the patient met the NICE referral criteria, a referral to secondary care would be made with the expected referral route being the urgent GP referral (2WW) pathway.

Therefore it would be expected that urgent GP referrals (2WW) would have increased as a result of the campaign.

Data source

The Cancer Wait Times Database is a centrally administered system that manages collection of the National Cancer Waiting Times Monitoring Dataset (NCWTMDS). The NCWTMDS is a patient level dataset containing details of event dates, diagnoses and procedures that is used to provide management reports to support care provision and commissioning. Extracts of these data are also used by the DH for publication as official statistics. The time taken for those with suspected cancer to be seen by specialist following an urgent referral for suspected cancer from their GP can be calculated from this dataset.

Results

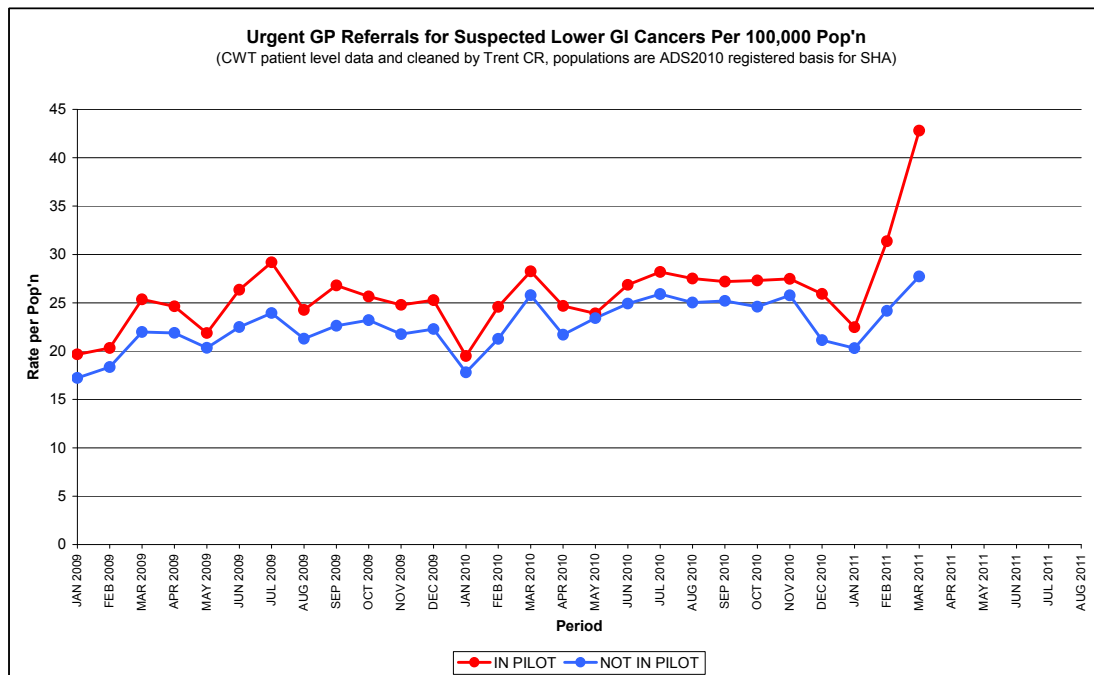
To look at impact of the campaign on urgent GP referral activity (2WW), the following questions were considered:

1. What was the difference in urgent GP referral (2WW) activity between non-pilot and pilot areas?
2. Was there any difference associated with differences in TV coverage of the campaign?
3. Was there a difference in urgent GP referral (2WW) activity between Trusts in the pilot areas?
4. Did any difference in urgent GP referral (2WW) referral lead to a change in Trust performance?

5. Was there any change associated with the campaign, in those referred?

1) What was the difference in urgent GP referral (2WW) activity between non-pilot and pilot areas?

Figure 49 – Urgent GP referrals for suspected Lower GI cancers per 100,000 population



Source: National Cancer Waiting Times Monitoring Dataset records (extracted from the CWT-Db) processed by Trent Cancer Registry (commissioner based)

Figure 49 shows that there has been an overall slight upward trend in urgent GP referrals (2WW) in both pilot areas and non-pilot areas, since January 2009. Levels in the two pilot areas had been consistently higher than in non-pilot areas prior to the campaign, and had reflected similar seasonal variation. However in the pilot areas there is a clear peak in referrals beginning in February 2011 (from 23 to 43 per 100,000 population in the pilot areas compared to 20 to 27 in the non-pilot areas).

This indicates that there was a higher level of urgent GP referrals (2WW) for suspected bowel cancer associated with the campaign.

2) Was there any difference associated with differences in TV coverage of the campaign?

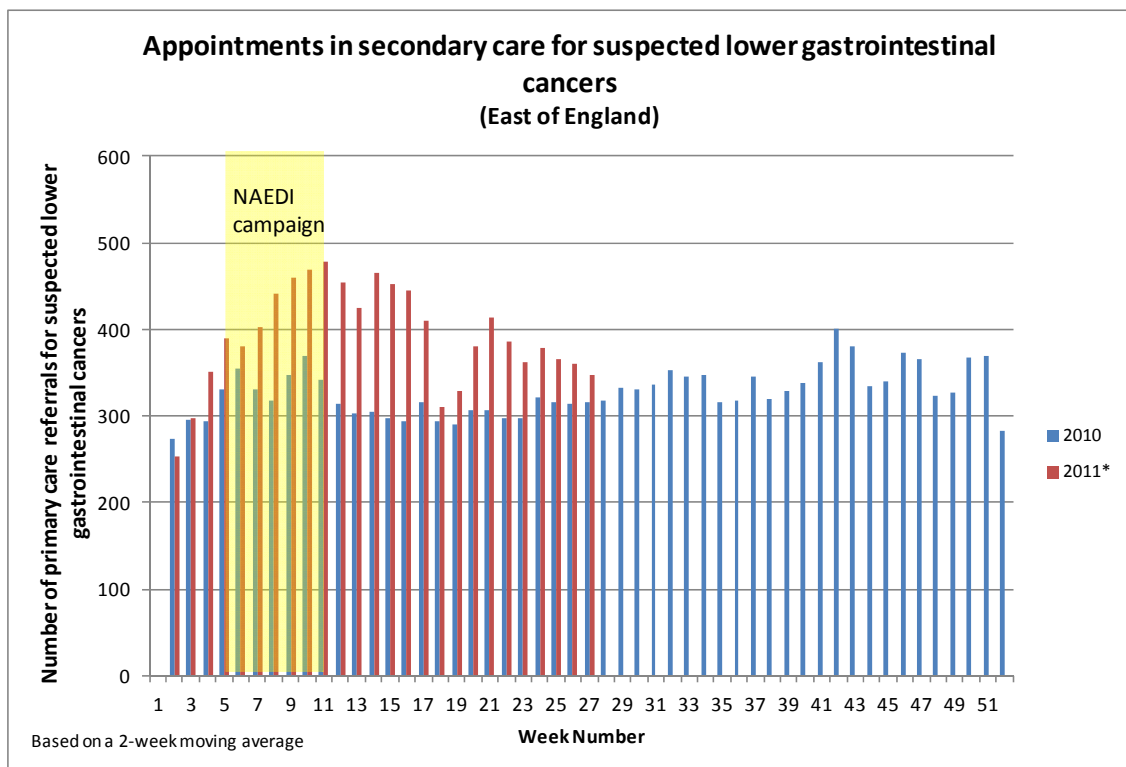
As TV adverts had the greatest reach of all media channels, it might be expected that any difference in coverage of this element of the campaign might impact on levels of presentation and onward referral through the urgent GP referral (2WW) pathway.

To examine this issue detailed analysis was carried out on data covering the different Cancer Networks in one of the two pilot areas – the East of England. Networks,

unlike Trusts, cover discrete geographical areas and so any differences in terms of exposure to the TV advertising element of the campaign on a geographical population can be identified.

These data are based on people living in the East of England SHA referred as a suspected new case of bowel cancer. Overall for people living within the region there was a marked increase in the number of appointments in 2011 immediately before, during and after the campaign compared to 2010 (fig 50). The dip in week 18 was due to two bank holidays falling in that week. The level remained higher following the campaign.

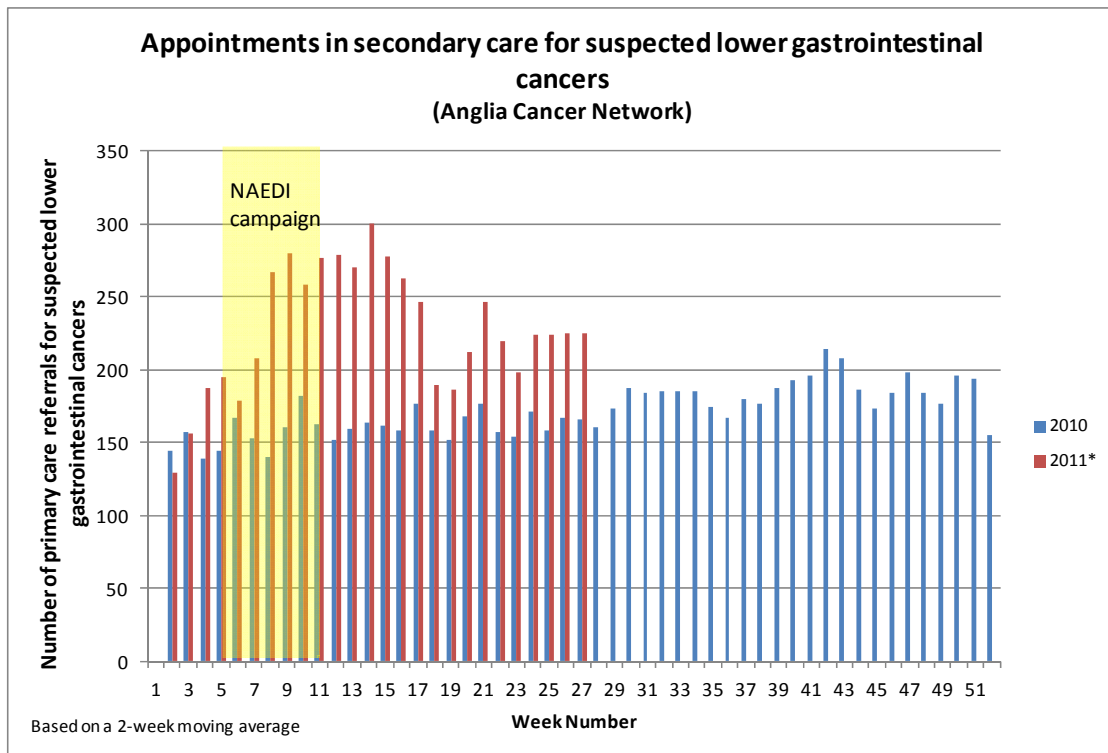
Figure 50 – Urgent GP referrals (2WW) for suspected bowel cancer by date first seen in secondary care – East of England



Source: National Cancer Waiting Times Monitoring Dataset records (extracted from the CWT-Db) processed by the Eastern Region Cancer Registry and Information Centre (resident based)

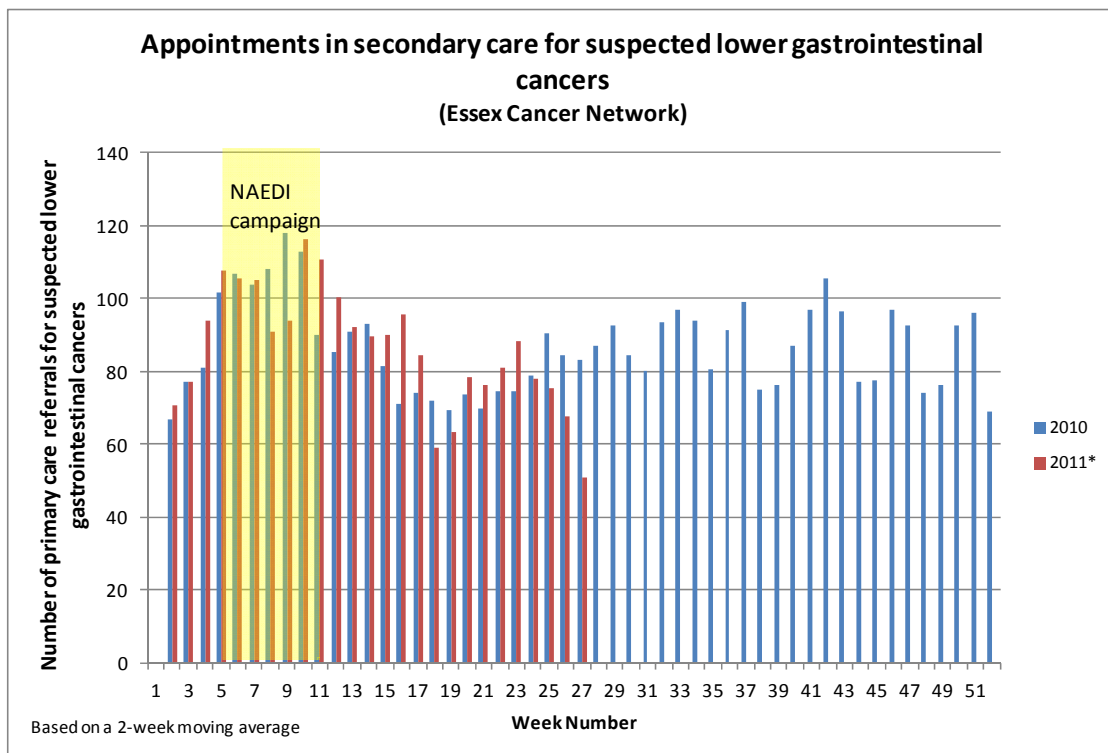
When looking at the three Cancer Networks which make up the East of England SHA, the majority of the increase in appointments can be seen to have occurred in the Anglia Network (fig 51).

Figure 51 – Urgent GP referrals (2WW) for suspected bowel cancer by date first seen in secondary care – Anglia Cancer Network



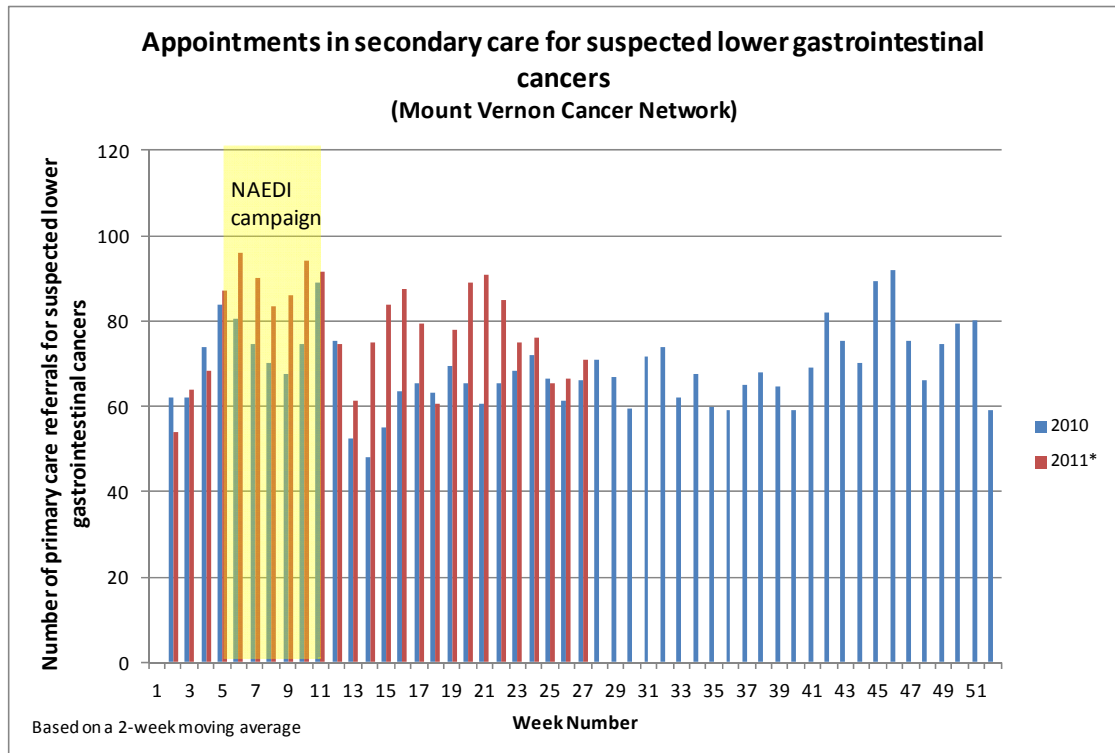
Source: National Cancer Waiting Times Monitoring Dataset records (extracted from the CWT-Db) processed by the Eastern Region Cancer Registry and Information Centre (resident based)

Figure 52 – Urgent GP referrals (2WW) for suspected bowel cancer by date first seen in secondary care – Essex Cancer Network



Source: National Cancer Waiting Times Monitoring Dataset records (extracted from the CWT-Db) processed by the Eastern Region Cancer Registry and Information Centre (resident based)

Figure 53 – Urgent GP referrals (2WW) for suspected bowel cancer by date first seen in secondary care – Mount Vernon Cancer Network



Source: National Cancer Waiting Times Monitoring Dataset records (extracted from the CWT-Db) processed by the Eastern Region Cancer Registry and Information Centre (resident based)

For the population of Anglia Network the number of new appointments at the end of the campaign period and immediately following it was approximately 50% higher than that seen in the same period in 2010. There was some increase in appointments both during and after the campaign in Mount Vernon Network, but little increase in Essex Network. Both Mount Vernon and Essex Networks seem to have had a slight increase in the same period in 2010, but it is not clear what the reason for this might be, and might reflect seasonal variation.

Analysis of the TV advertising coverage identified that the highest coverage was within Anglia, due the TV provider for the East of England pilot being the local regional provider (Anglia TV), with the other two areas having only partial coverage. It would appear therefore that there is an association between the degree of TV advertising coverage and the level of urgent GP referrals (2WW) in the time period associated with the campaign.

3) Was there a difference in urgent GP referral (2WW) activity between Trusts in the pilot areas?

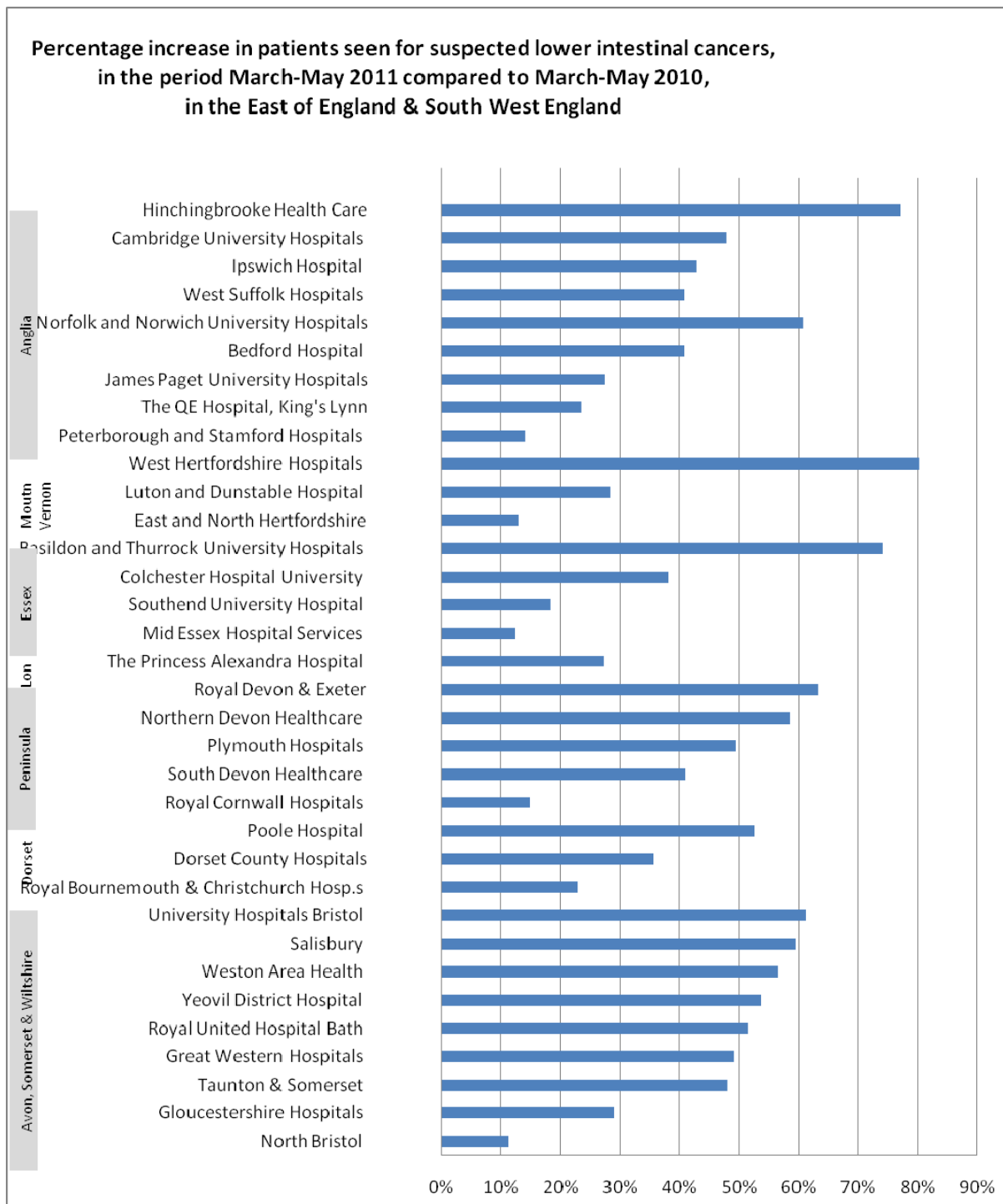
Given different population exposure levels to the campaign, and possible differences in both patient and GP behaviours, it would be expected that the different Trusts would experience different levels of urgent GP referral (2WW) referral activity.

Indeed, urgent GP referral (2WW) activity for the pilot areas shows variation both between networks and between the individual Trusts that make up those networks.

While all Trusts show variation in referrals month by month historically, there is considerable variation in the percentage increase in referrals seen, both within and between the Networks, with most Trusts experiencing more than 40% increase in referrals levels in March 2011 compared with March 2010, and some experiencing considerably greater percentage increases. It can be seen that for nearly all Trusts the level of activity continued to be raised beyond the end of the campaign.

To give an indication of the level of increase in the time period immediately following the campaign, referral activity by Trust for the 3-month period March – May 2011 was compared to the similar timescale in 2010 (Figure 54). It should be noted that data for April 2011 was not reported for Royal Cornwall Hospitals NHS Trust and so there is a consequent underreporting of activity for the 3-month period for this Trust.

Figure 54 – Percentage increase in Urgent GP referrals (2WW) by Trust, March -May 2011 compared to 2010



Source: Cancer Waiting Times and Activity Data provided by Anglia Cancer Network, analysis of provider based management data.

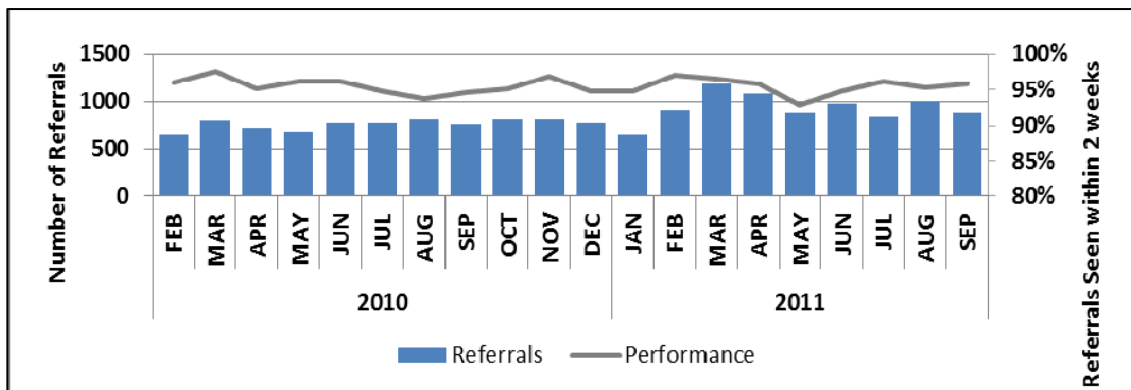
4) Did the increase in urgent GP referrals (2WW) lead to a change in Trust performance?

The proportion of urgent GP referrals (2WW) that are first seen by a specialist within two weeks in NHS Trusts is routinely monitored as it is one of the Headline Quality Measures in the Operating Framework for the NHS in England for 2011/12.

East of England

Data has been analysed from Anglia as this was the Network that experienced the greatest number of urgent GP referrals (2WW). Looking at the proportion of 2WW referrals actually seen within two weeks, the increase in referrals in Anglia Cancer Network in March and April led to a decrease in the proportion seen within two weeks in May. It fell from 97% in February to 93% in May (Figure 55).

Figure 55 – Proportion of those people referred via the urgent GP referral (2WW) path in Anglia Cancer Network who were actually seen within a 2 week period.

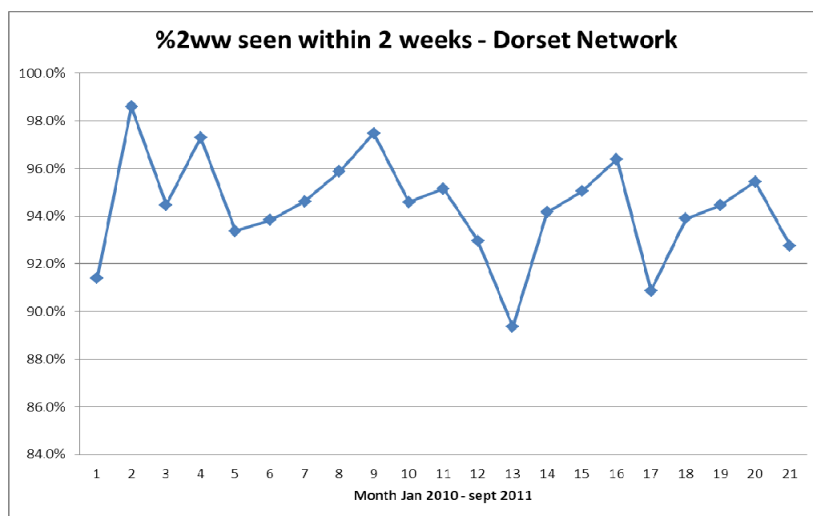
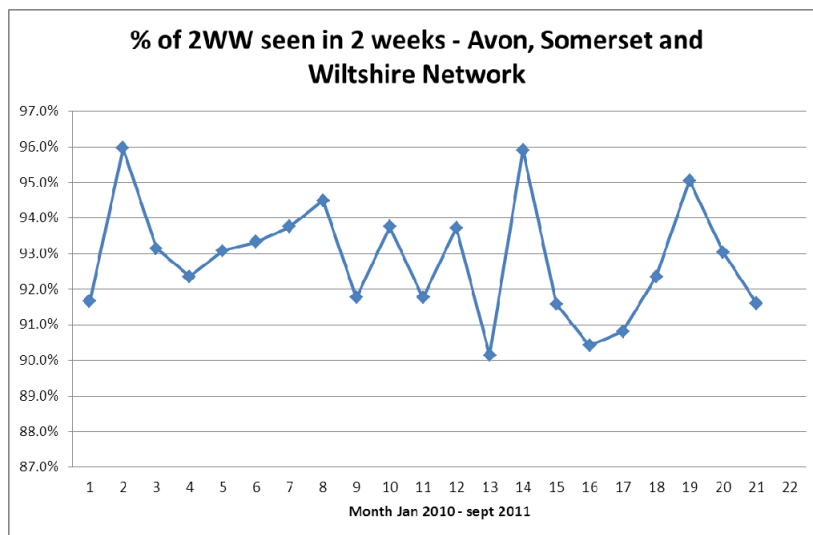
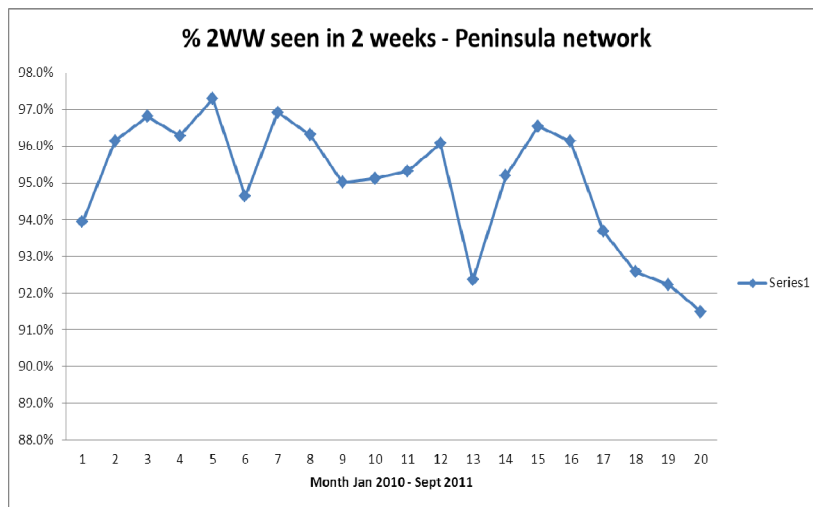


Source: Cancer Waiting Times and Activity Data provided by Anglia Cancer Network, analysis of provider based management data.

South West

In the South West there was variation between the networks with Peninsula and Avon Somerset and Wiltshire experiencing the greatest reduction in performance in the months following the campaign (Figure 56).

Figure 56 – Proportion of those people referred via the urgent GP referral (2WW) route in the South West who were actually seen within 2 weeks, by network.



Source: Cancer Waiting Times and Activity Data provided by South West SHA, analysis of provider based management data.

5) Was there any change associated with the campaign in the age distribution of those referred?

Figure 57 shows the age distribution of those patients who were referred urgently for suspected cancer by their GP (2WW). For both pilot areas there is strong evidence of a relative increase in referrals for those under 55 years old between February and March 2011 compared with 2010. There was a 76% increase in the number of referrals in the East of England and a 64% increase in the South West. In February and March 2010, 13.8% of all patients referred in both pilot regions were under 55 years of age (13.5% East of England, 14% South West), this increased to 17% in the corresponding period in 2011 (17.3% and 16.8% respectively). In absolute terms these patients represent 28% of the total increase in East of England and 24% in South West, with most referrals being in the target age group 55 years or older).

Figure 57 – Age distribution for urgent GP referrals (2WW) for suspected lower GI cancers, February – March 2010 and 2011

SHA	Age Band	Ages	Feb. and Mar. 2010	Feb. and Mar. 2011	% Change
EAST OF ENGLAND	A	<50	180	319	77%
	B	50-54	119	208	75%
	C	55-59	191	261	37%
	D	60-64	282	358	27%
	E	65-69	294	412	40%
	F	>=70	1153	1481	28%
EAST OF ENGLAND Total			2219	3039	37%
SOUTH WEST	A	<50	341	604	77%
	B	50-54	253	369	46%
	C	55-59	322	470	46%
	D	60-64	560	780	39%
	E	65-69	557	768	38%
	F	>=70	2198	2784	27%
SOUTH WEST Total			4231	5776	37%

Source: National Cancer Waiting Times Monitoring Dataset records (extracted from the CWT-Db) processed by Trent Cancer Registry (commissioner based)

Discussion of findings

There was a clear increase in the number of urgent GP referrals (2WW) in the pilot areas compared to the rest of England for the time period associated with the campaign. This increased level of activity is shown to extend beyond the campaign period within the statistics made available by the local NHS..

Based on findings from the East of England, the increase in referral activity seems to be higher in populations living in areas which experienced maximum TV campaign coverage. This confirms that the TV advertising element of the campaign not only had an impact on awareness levels, but also led to behaviour change.

There was variation in levels of referral experienced within and between individual Trusts during and in the period after the campaign. Most Trusts experienced a more than 40% increase in referral activity in the peak referral month, March 2011, with some experiencing greater levels. This raised level continued for several months after the end of the campaign.

The sustained nature of the increase suggests that not all people responded to the campaign immediately. For some this might have been because their symptoms started after the campaign period; for others it might have been due to time for the GP to decide to refer a patient; for others it might have been a delayed response in presenting to their GP as a result of the campaign. Whatever the reason, this prolonged increase in referral levels will need to be considered in any future campaign planning.

It is apparent that this increased level of referral had an impact on Trusts' performance levels. Both pilot areas experienced a reduction in the proportion of urgent GP referrals (2WW) actually seen within the 2 week period.

In terms of the age distribution of those referred, there is evidence that there was a greater relative increase in referrals of those under 55 years old between Feb – March 2010 and 2011, compared to those over 55 years old. However, in terms of absolute numbers, this represents between 28 – 24% of the overall increase in referrals, with most referrals being in the target age group (>55 years old).

Conclusion

1. There was an increase in urgent GP referrals (2WW) in the pilot areas that can be associated with the campaign, which can be seen for 5 months beyond the end of the campaign in some localities.
2. This increase appears more marked in those providers operating in the geographical areas of maximum TV campaign coverage, which confirms that the TV element of the campaign changed people's behaviour.
3. There were variations both at a regional level and between Trusts in terms of referrals over the time period associated with the campaign, with some trusts experiencing greater than 40% increase during the peak month (March).
4. This increase resulted in a reduction in Trust performance in terms of the proportion of urgent GP referrals (2WW) seen within 2 weeks.
5. There was a greater relative increase in referrals for those under the age of 55 years old compared to those over 55 in the immediate period associated with the campaign when compared to the same period the previous year. However this increase represents between 28 – 24% of the overall increase in referrals

6.5. Diagnostics

Did the campaign have an impact on diagnostic demand and activity?

If the campaign resulted in more urgent GP referrals (2WW) of patients with symptoms suggestive of cancer, it would be expected that there would be similar

increases in diagnostic activity. For the purposes of this analysis, the focus has been on colonoscopy activity and demand in secondary care.

Colonoscopy

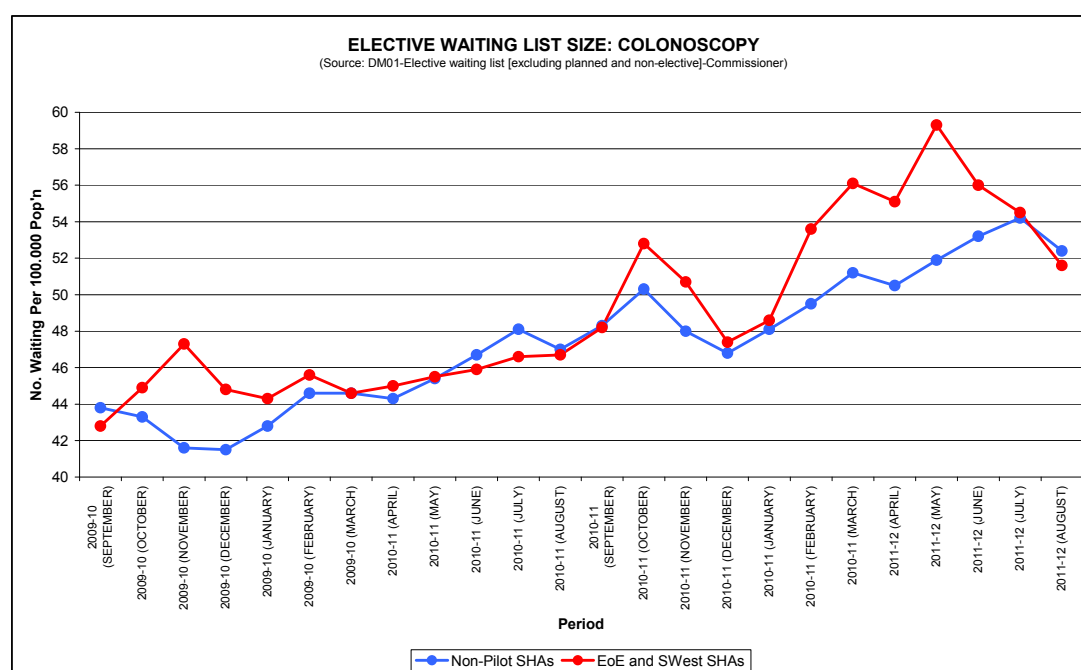
Analysis of colonoscopy demand and activity was undertaken using the available official statistics on diagnostic activity and waiting lists, the 'DM01' dataset. This dataset categorises activity as:

1. elective off a waiting list;
2. elective planned; or
3. non-elective.

1) Elective waiting list

During and immediately following the campaign period the elective waiting list for colonoscopy within the pilot SHAs experienced greater growth than that for the rest of the country, this is illustrated on Figure 58 (below). This graph shows the size of the elective waiting list per 100,000 population for the two pilot areas combined and the rest of the country.

Figure 58 – Elective waiting list for colonoscopy

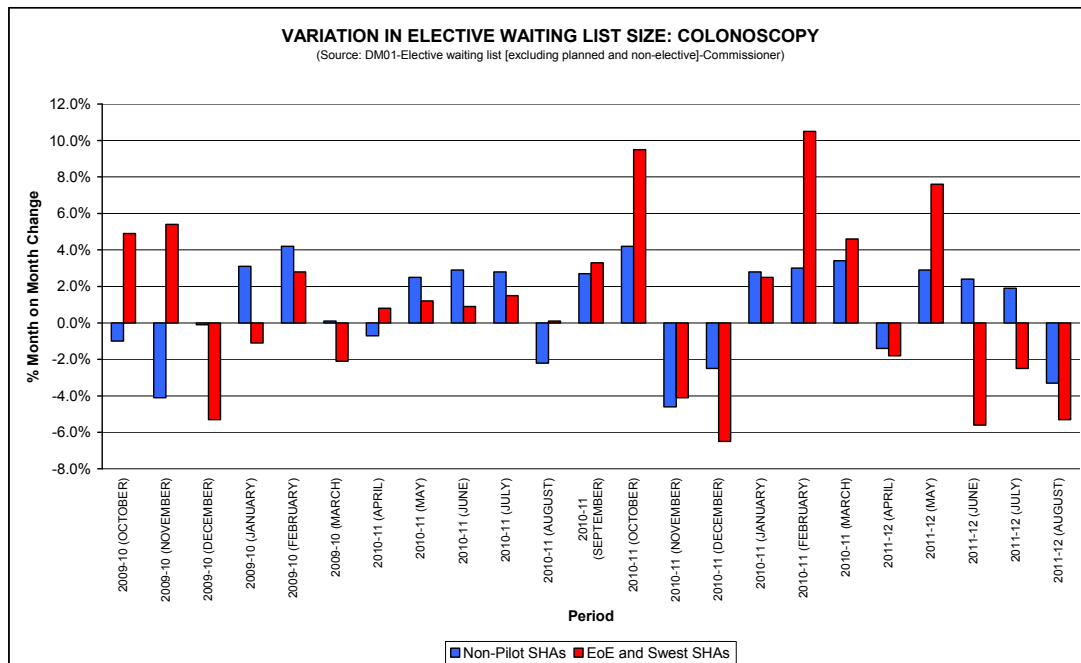


Source: Department of Health, Diagnostic Waiting List and Activity Data (DM01)

Overall there is an increase in waiting list over time for both the pilot SHAs and the rest of the country, and this shows some fluctuation over time. However for the two pilot SHAs there is a clear increase in activity starting in February 2011 and continuing for the duration of the campaign, only dropping back to the level similar to the areas outside the pilot in July 2011.

It appears that there are peaks in growth of the pilot SHAs' waiting lists – and this is confirmed by looking at the month on month variation in waiting list size in terms of percentage.

Figure 59 – Month on month variation in elective waiting list for colonoscopy



Source: Department of Health, Diagnostic Waiting List and Activity Data (DM01)

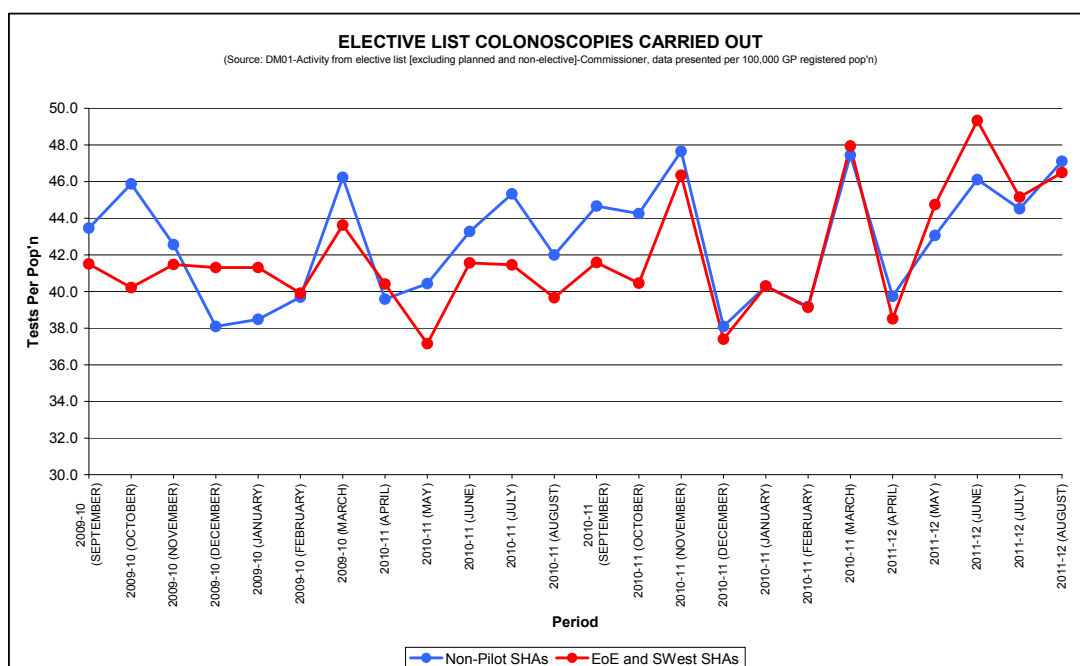
Fig 59 indicates that the two pilot SHAs show considerably greater month on month variation in activity during and after the campaign than prior to it. The following observations can be made:

1. The significant rises in February (>10%) and March 2011 (>4%) coincide with the time of the campaign and so are likely to be linked with this.
2. The second rise in May (8%) might reflect requests for patient on the normal, non-suspected-cancer, referral route (referral to treatment or RTT pathways).
3. The reduction of the list in June, July and August may reflect a reduction in numbers of people being put on the list after the campaign and/or levels of activity within Trusts to clear any backlog of people waiting.

For those non-pilot SHAs the level of fluctuation seems consistent with the overall levels seen during the preceding months.

In terms of the numbers of colonoscopies carried out, Fig. 60 shows the numbers of elective colonoscopies carried out per 100,000 population.

Figure 60 – Elective colonoscopy activity per 100,000 population



Source: Department of Health, Diagnostic Waiting List and Activity Data (DM01)

As can be seen the activity levels for the two pilot SHAs run at a lower level overall compared to the rest of the country over the months preceding the campaign.

All areas experienced a reduction in activity during December, January and February, rising again in March to similar levels as at November the previous year. The reduction in April for all areas may in part reflect the reduction in working days that month. Activity then rises over the next months, with a very much greater rise in the two pilot SHAs than the rest of the country.

This would suggest that while there was an increase in activity in the two pilot SHAs that would coincide with the first referrals coming through the system from the campaign in March, this was not sustained in April, with a subsequent increase in activity in the next 3 months above the national levels.

This may reflect the capacity in the system. The waiting list increase in February and March appears to have resulted in the peak in activity in March. This peak is at a similar level to activity in November 2010, which appears to have been driven by an increase in the waiting list in October 2010. However the decline in activity in April is likely to have added to the increased waiting list seen in April and May. The increased activity from May onwards will have contributed to the reduction in waiting list seen from June onwards.

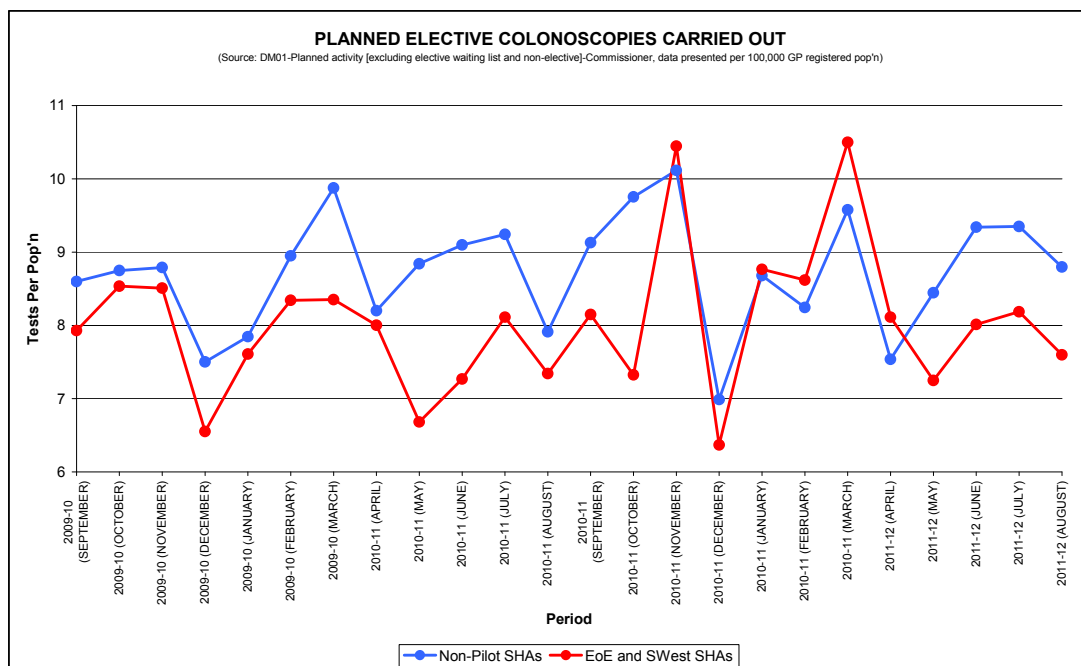
This suggests that Trusts are used to responding to fluctuations in demand, and had previously responded in November 2010 to an increase in the waiting list. It seems that Trusts in the pilot areas attempted to respond to the increased demand for colonoscopies in March, replicating similar levels of activity to that in November, but

were not able to sustain this. However Trusts have subsequently responded and undertaken higher levels of activity than before, in order to reduce the waiting list.

2) Elective planned

In addition to elective waiting list colonoscopies, planned elective colonoscopies can be identified. These are colonoscopies with a set date, and so the patient is not considered to be “waiting”. Fig 61 shows planned elective colonoscopies undertaken per 100,000 population.

Figure 61 – Planned elective colonoscopy activity per 100,000 population

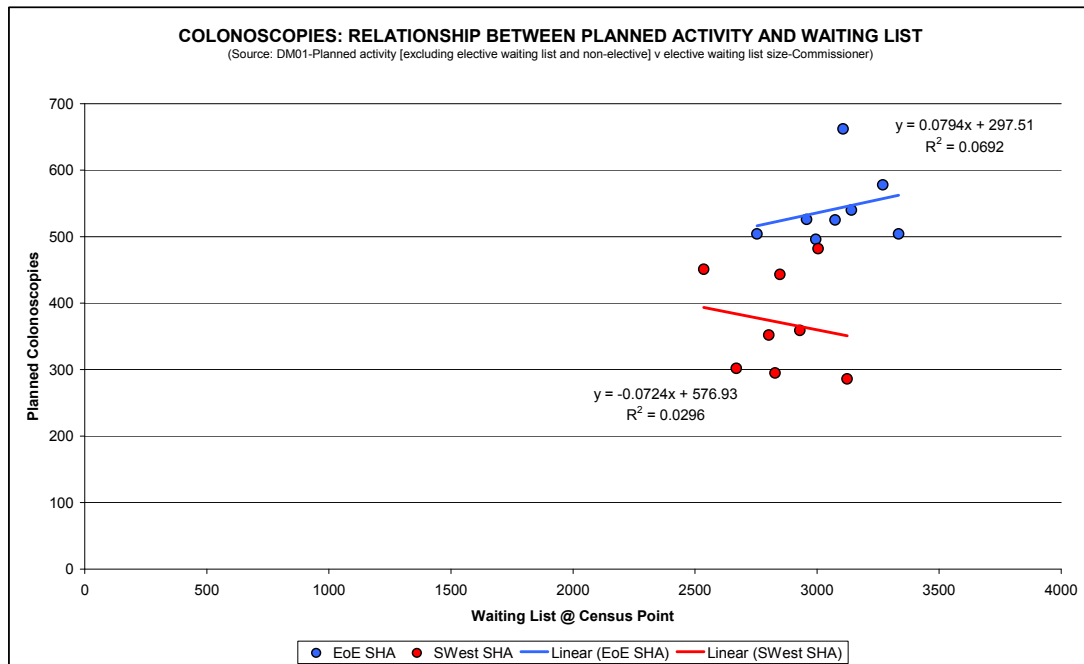


Source: Department of Health, Diagnostic Waiting List and Activity Data (DM01)

It indicates that, historically, the two pilot SHAs had a lower level of planned elective colonoscopies than the rest of the country. They experienced a peak in activity in November 2010 and then again in March 2011. There was then a decline back to previous levels at the same time as elective waiting list activity increased.

Looking at activity within the two pilot SHAs only, an analysis of the relationship between list sizes for elective colonoscopy and levels of planned colonoscopy shows differences between the two areas (see graph that follows).

Figure 62 – Relationship between elective waiting list and planned activity in the two pilot SHAs

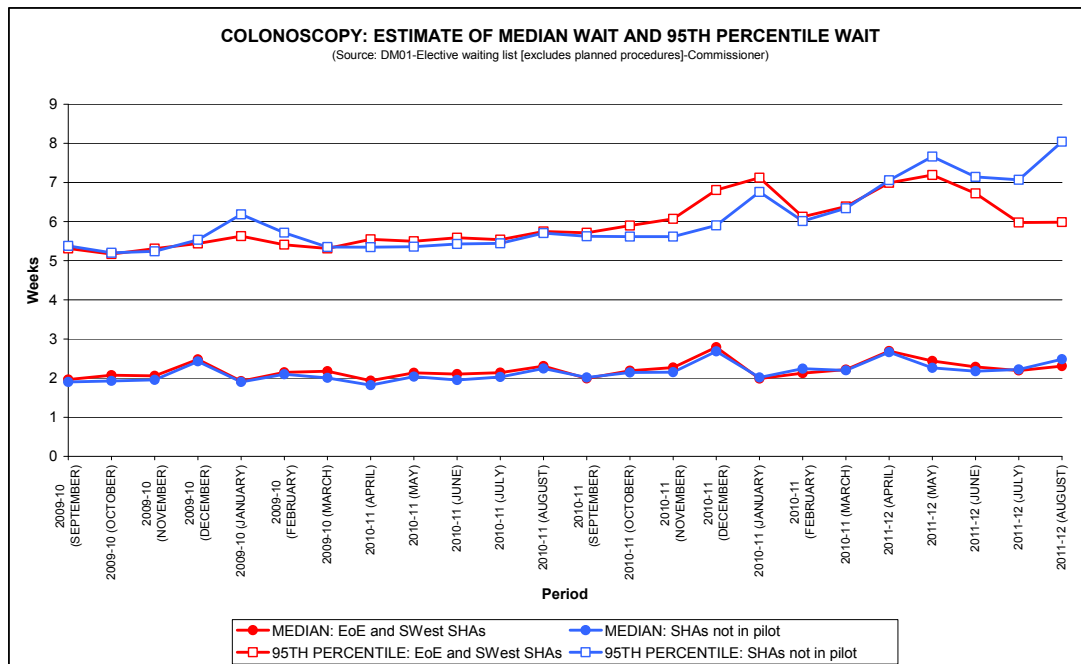


Source: Department of Health, Diagnostic Waiting List and Activity Data (DM01)

Fig 62 shows that the East of England SHA maintained its planned activity at the same time as the waiting list was rising, whereas the South West (SW) appears to show a decrease in planned activity at the same time as waiting list size was decreasing.

Over the campaign period the waiting time for colonoscopy remained broadly consistent for the two pilot SHAs, with the exception of those patients at the 95th percentile (Fig. 63).

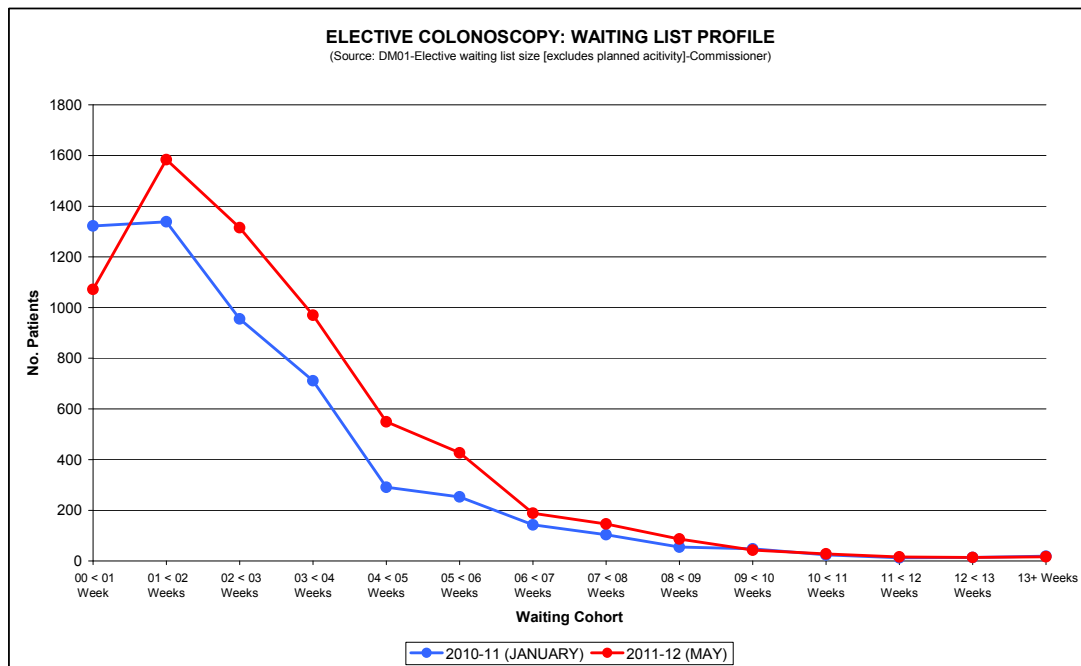
Figure 63 – Median elective colonoscopy waiting times for the two pilot SHAs



Source: Department of Health, Diagnostic Waiting List and Activity Data (DM01)

This change is probably caused by the change to the structure of the list caused by referrals from the awareness campaign. The increase to the list of those who would be “short waiters” at the census point has moved the 95th percentile point (fig 64).

Figure 64 – Time on waiting list – waiting list profile



Source: Department of Health, Diagnostic Waiting List and Activity Data (DM01)

Between January and May 2011 there was a “bulge” of activity relating to the period of the campaign. These data however do not allow us to identify whether this short term rise in demand will have further impact on median waiting times.

Conclusions

There is clear evidence of an increase in colonoscopy activity to respond to the demand. However this demand outstripped Trusts’ ability to respond initially, although subsequently activity increased to levels higher than previously.

Adverse Events

In terms of unintended consequences, colonoscopy is not without a degree of risk. Colonoscopic adverse events are unusual but can be potentially life threatening.⁹

An adverse event is defined as one that prevents completion of the planned procedure (excluding technical failure or poor preparation), and/or results in:

1. admission to hospital or prolongation of existing hospital stay;
2. another interventional procedure, or
3. subsequent medical consultation.

The NHS BCSP Quality Assurance Guidelines¹⁰ standard for colonoscopic perforation is <1:1,000 colonoscopies, and <1:500 for colonoscopies where polypectomy is performed (removal of polyps). From February to June 2011 there were 4321 additional urgent GP referrals (2WW) compared to the same period in 2010.

Experience from the UK screening pilot on the proportion of those with a positive faecal occult blood test who proceeded to colonoscopy was in the order of 80%¹¹. Assuming this applies to this cohort, then approximately 3,400 of the additional colonoscopies were as a result of the increased referrals. From this it can be estimated that, assuming BCSP guideline standards were achieved, there would have been approximately 5 perforations as a consequence of the additional activity resulting from the campaign during this period. If it is assumed all the additional urgent GP referrals (2WW) proceeded to colonoscopy, then we could estimate that there would have been approximately 6 additional perforations.

Histopathology

The increase in colonoscopy activity is likely to have led to an increase in histopathology activity. There is no centrally collected data that records histopathology activity. As a result this issue was not specifically measured as part of

⁹ Quality Assurance Guidelines for colonoscopy. NHS Screening Programme, 2011 (NHS BCSP Publication No 6)

¹⁰ Ibid

¹¹ Weller D, Coleman D, Robertson R, Butler P, Melia J, Campbell C, Parker R, Patnick J, Moss S. The UK colorectal cancer screening pilot: results of the second round of screening in England. *Br J Cancer* 2007;97:1601–5

this evaluation, and is an area that will need to be addressed in the national roll out of the campaign.

Discussion of findings

Colonoscopy activity is not limited to urgent GP referrals (2WW) but is a test undertaken for a wider group of diagnoses. However it can be seen that the increase in overall colonoscopy demand and activity occurred in the same time period as the increase in 2WW referrals – so it can be concluded that the increase in these referrals had a direct impact on colonoscopy demand and activity.

In terms of colonoscopy activity, it would seem that Trusts in the pilot areas responded initially, in March, by increasing activity levels considerably to meet the demand. However Trusts were unable to sustain these activity levels, which impacted on the waiting list. Subsequently activity levels increased once again, leading to a reduction in the waiting list.

In addition to a Trust's overall physical capacity in terms of staff and facilities to undertake colonoscopies, the time available to undertake these tests plays an important part in activity levels. In both the months of April and May there were a number of bank holidays which reduced capacity for undertaking elective work. It would seem that different strategies were used in the two pilot areas in response to the increased demand. In the SW, Trusts appear to have altered their planned activity levels to cope with the increased waiting lists, while in the East of England the Trusts maintained planned activity resulting in increasing waiting lists.

This campaign has identified a number of issues for future planning of such sudden increases in demand. Capacity planning needs to take account not only of physical resources, but also the working time available to undertake elective activity. There also needs to be consideration of how to manage competing demand in terms of planned versus elective waiting list activity.

Conclusions

1. There is clear evidence of an increase in colonoscopy activity to respond to the demand. However this demand outstripped Trusts' ability to respond initially, although subsequently activity increased to levels higher than previously.
2. Part of the reason for Trusts' difficulties in dealing with the demand was due to the reduction in working days available for elective work in April and May.
3. There appear to have been different responses between the two pilot areas in dealing with demand in terms of planned colonoscopy activity
4. It is estimated that, assuming BCSP guideline standards were achieved, there would have been approximately 5-6 bowel perforations as a result of the additional colonoscopy activity performed from February to June 2011 compared to the same period in 2010.

6.6. Number of cancers detected

This section currently only includes statistics relating to periods covered by published official (commissioner based) and national (provider based) statistics so as to minimise the risk of pre-empting a future publication.

Other sections of this report have shown that the campaign, by raising people's awareness to signs of bowel cancer, and encouraging symptomatic people to present to their GP, resulted in more people suspected of having bowel cancer being referred to secondary care in the time period associated with the campaign. It would be expected that this would result in more bowel cancers being detected.

Data sources

Cancer registration data was analysed by the Eastern Cancer Registration and Information Centre (ECRIC) and South West Public Health Observatory (SWPHO). Data are received by the registries from Trusts providing cancer services on a monthly basis. However not all cases seen in a particular month will be returned in that same month, partly due to the way the Somerset system used by MDTs (Multidisciplinary Teams) defines a completed case, and partly due to time taken to report on some investigations such as pathology. Full information needed to stage a case can take longer due to the complexity of some cases.

Did the number of bowel cancers diagnosed associated with the campaign increase?

1) Total cancers detected from both pilot areas

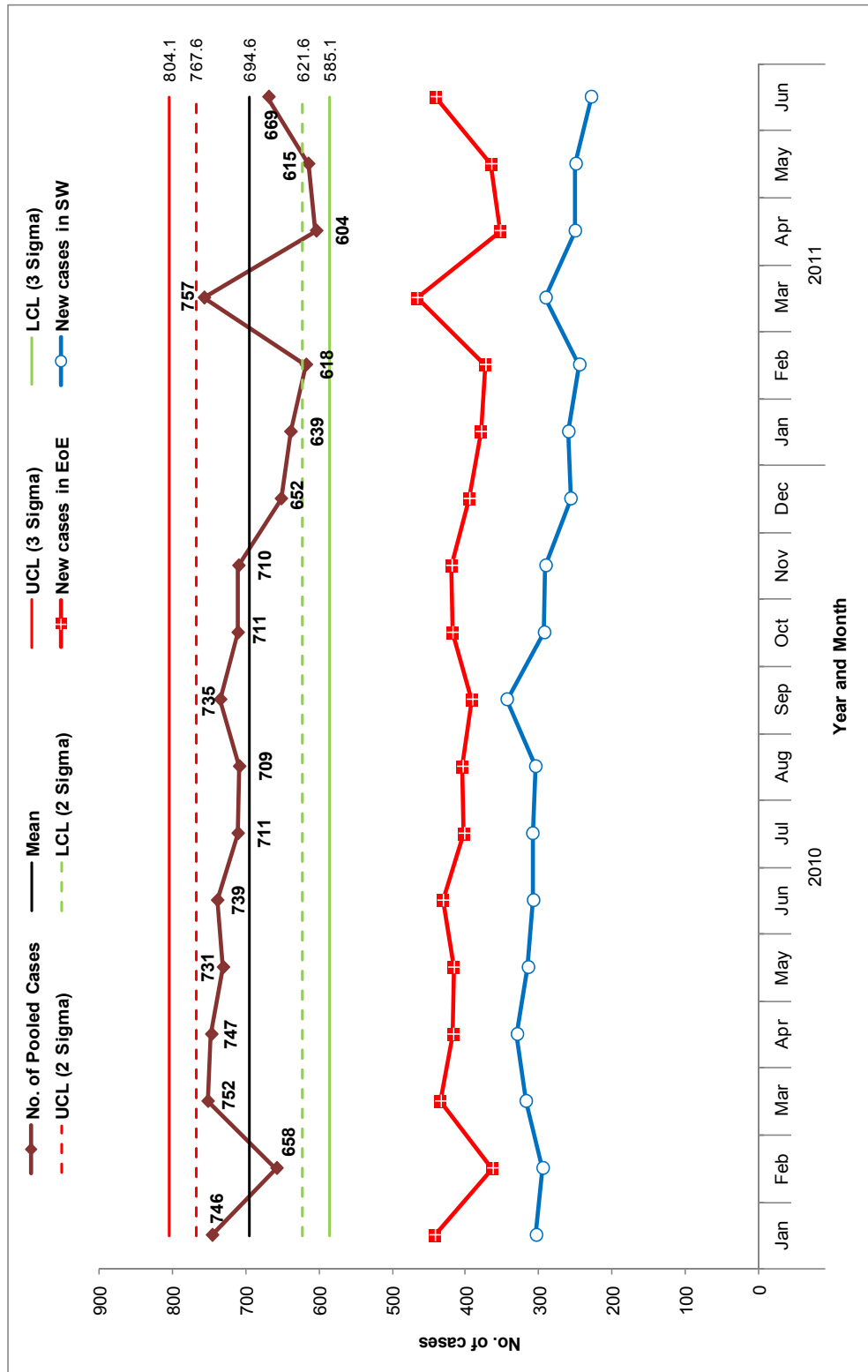
There is considerable variation month on month in the number of newly diagnosed cancers. The campaign ran from 31st January to 31st March 2011, and so the impact of the campaign should begin to be seen from February onwards. The number of confirmed diagnoses was therefore compared between January 2010 and June 2011.

Figure 65 – Count of Bowel Cancer (ICD-10 C18-C20) newly diagnosed cases in East of England (EoE) & South West (SW), by Month, January 2010 - June 2011

Year	Month	New cases in EoE	New cases in SW	No. of Pooled Cases
2010	Jan	442	304	746
	Feb	363	295	658
	Mar	434	318	752
	Apr	417	330	747
	May	416	315	731
	Jun	431	308	739
	Jul	402	309	711
	Aug	404	305	709
	Sep	391	344	735
	Oct	418	293	711
	Nov	419	291	710
	Dec	395	257	652
	TOTAL	4,932	3,669	8,601
2011 (Jan - Jun only)	Jan	379	260	639
	Feb	373	245	618
	Mar	466	291	757
	Apr	353	251	604
	May	365	250	615
	Jun	440	229	669
	TOTAL	2,376	1,526	3,902

Source: Cancer Registries of the Eastern Cancer Registration and Information Centre (ECRIC) and the South West Public Health Observatory (SWPHO)

Figure 66 – Count of Bowel Cancer (ICD-10 C18-C20) newly diagnosed cases in East of England (EoE) & South West (SW), by Month, January 2010 - June 2011



Source: Cancer Registries of the Eastern Cancer Registration and Information Centre (ECRIC) and the South West Public Health Observatory (SWPHO)

Figs 65 and 66 show that there were on average 694.6 new cases of bowel cancer diagnosed each month in the east of England and the South West regions combined.

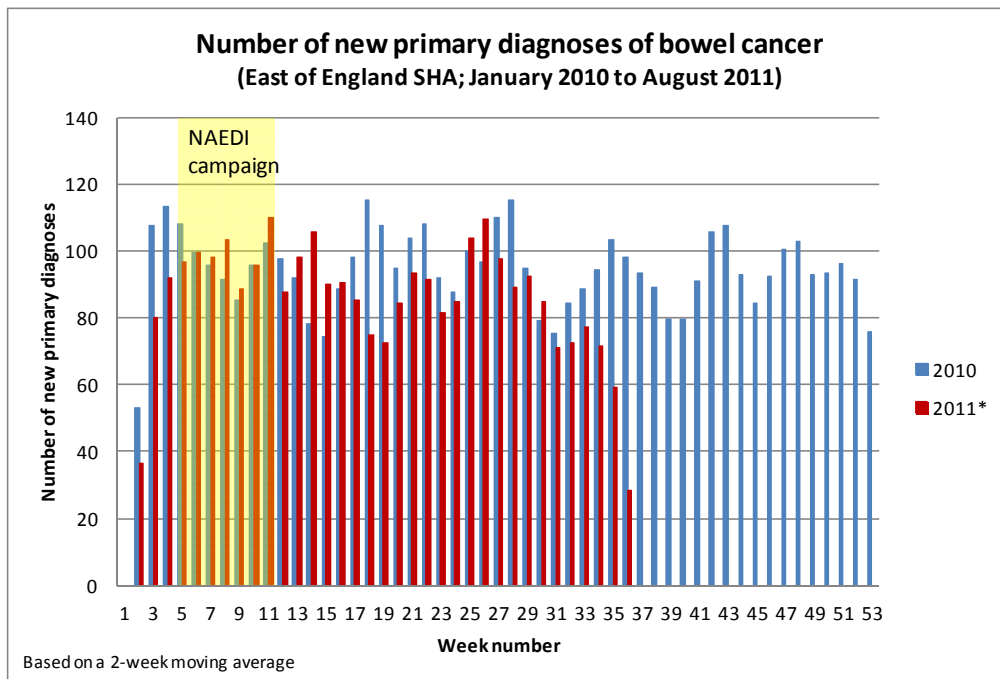
Overall the monthly count of pooled new cases in 2010 stayed consistently above the 18-month mean, except for February and December. However all the monthly counts of new cases in the first six months of 2011 were below the 18-month mean with the exception of March. This lower than average number of new cases is likely to reflect in part incomplete case pathological confirmation, especially in the South West due to differences in the speed of ascertainment by the different registries. It is therefore likely that there will be some increase in the number of new cases for 2011 in the coming months.

There was a slight increase in cases in March 2010; however this was only seen in the East of England. The rise in March 2011 is seen in both regions, though more noticeably in the East of England. However while this rise is high in the context of the first 6 months of 2011, it is not statistically significant when considered against the entire 18 month period. This increase was not sustained in the following months.

2) New cancers detected in East of England

Further analysis of the data for the East of England was undertaken by ECRIC. Fig 67 shows that the number of cases of newly diagnosed bowel cancer during and immediately following the campaign period was broadly consistent with the number diagnosed within the same period in 2010.

Figure 67 – Number of new diagnoses of bowel cancer Jan 2010 to August 2011 in East of England

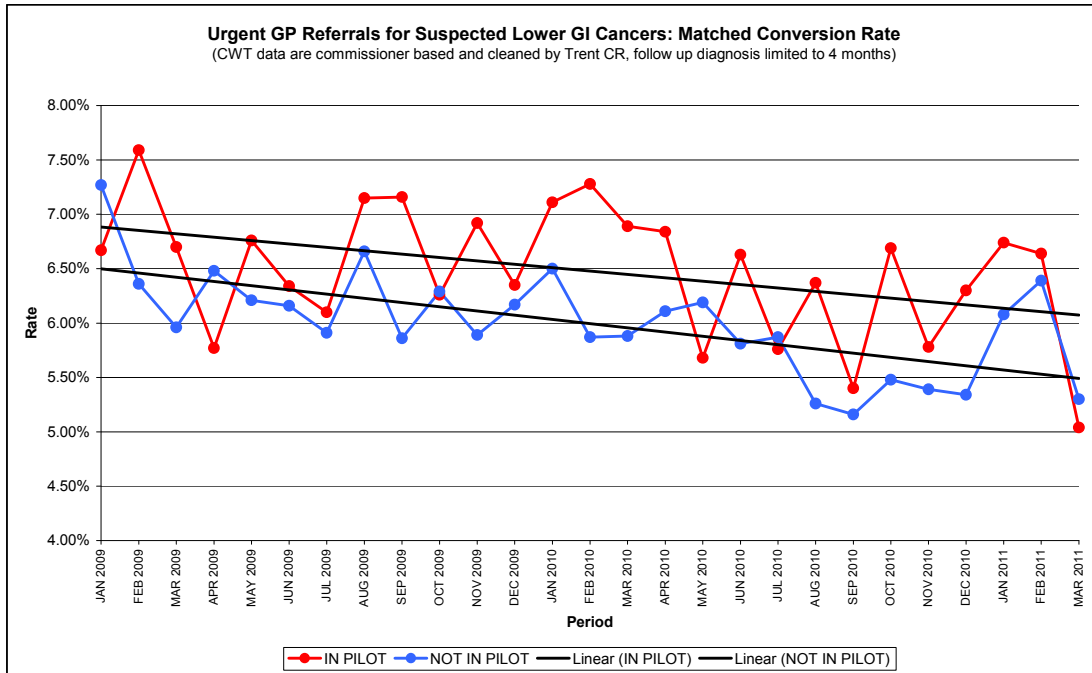


Source: Eastern Cancer Registry and Information Centre (ECRIC)

Did the conversion rate for urgent GP referrals (2WW) change in the period associated with the campaign?

The conversion rate is the rate of cancers detected in those referred under the urgent GP referral (2WW) pathway. The figure below shows the conversion rate for pilot and non-pilot areas.

Figure 68 – Urgent GP referrals for suspected lower GI cancers: Matched conversion rate

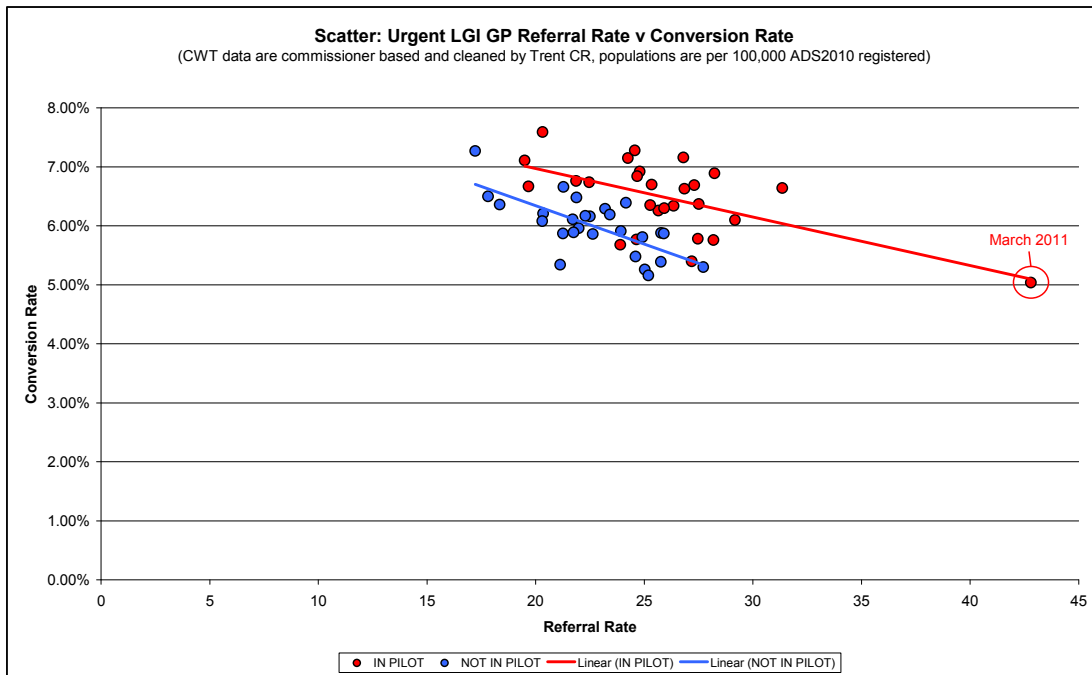


Source: National Cancer Waiting Times Monitoring Dataset records (extracted from the CWT-Db) processed by Trent Cancer Registry (commissioner based)

The latest month shown is March 2011, as the analysis presents diagnoses of cancer on a four month follow-up timescale. Fig 68 shows that there is considerable variation month by month. Conversion rates in the pilot areas are historically slightly higher than in the non-pilot areas. In both pilot and non-pilot areas there was a decline in conversion rates in the period before the campaign.

Between February and March 2011 there was a decline in conversion rates in the pilot areas that was greater than in the non-pilot areas, with the rate for the pilot areas dropping to the lowest level since January 2009. This suggests that the level of cancers detected in urgent GP referrals (2WW) reduced during and following the campaign. This is confirmed in figure 69 below which shows that in March 2011, there was a decline in conversion rate and an increase in urgent GP (2WW) referrals. This means that while there were more urgent GP referrals (2WW), the rate of cancers detected in this group fell. Further analysis will need to be carried out when data are available to determine whether this is an ongoing trend or a one off event.

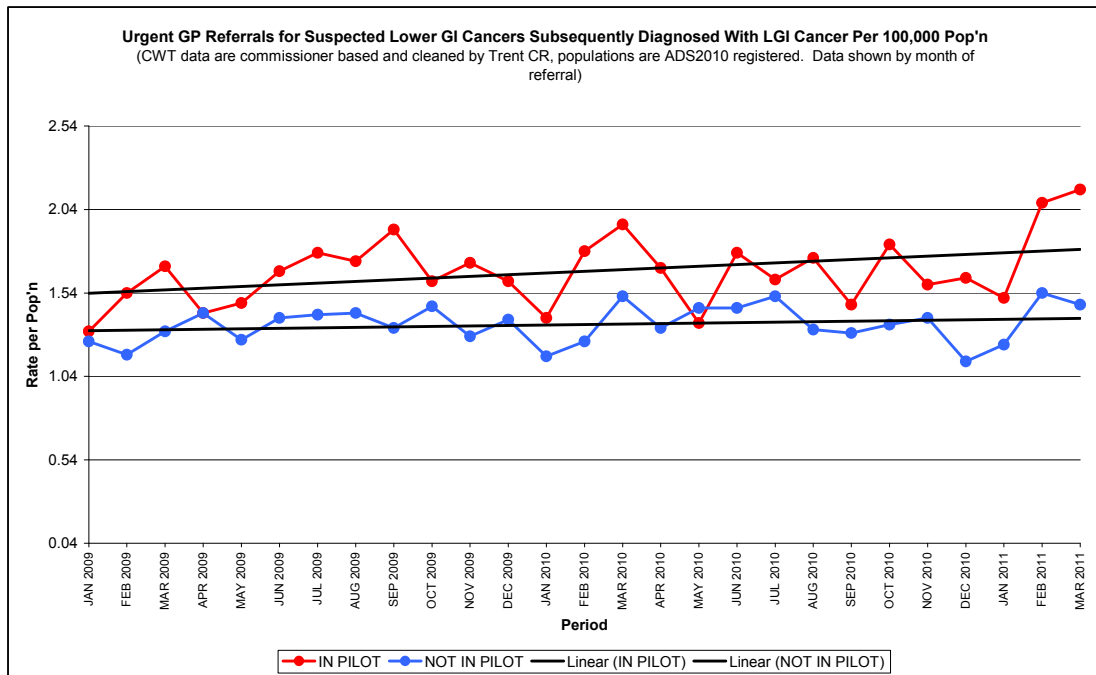
Figure 69 – Urgent lower GI referral rate versus Conversion rate



Source: National Cancer Waiting Times Monitoring Dataset records (extracted from the CWT-Db) processed by Trent Cancer Registry (commissioner based)

While the overall rates of cancers detected fell in people referred by the urgent GP referral (2WW) path in the pilot areas during and immediately after the campaign, figure 70 shows a higher rate of those cancers that were detected came via the urgent GP referral (2WW) path in February and March 2011. This suggests that there was a change in referral patterns associated with the campaign, with more people who were subsequently diagnosed with cancer having gone via the urgent GP referral (2WW) path rather than other referral routes, such as routine or emergency.

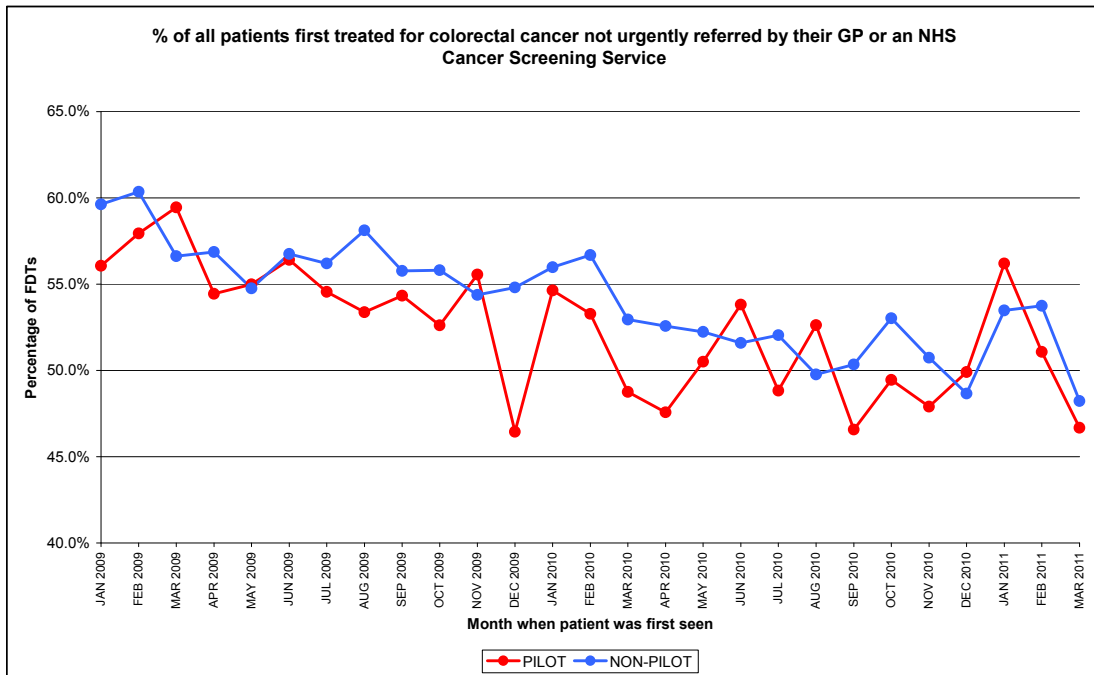
Figure 70 – Urgent GP referrals for suspected lower GI cancers subsequently diagnosed with lower GI cancer, per 100,000 population



Source: National Cancer Waiting Times Monitoring Dataset records (extracted from the CWT-Db) processed by Trent Cancer Registry (commissioner based)

This is confirmed in the figure 71 which shows a decrease in the proportion of patients receiving their first definitive treatment for bowel cancer who were referred via non-urgent GP referral (2WW) paths for both pilot and non-pilot areas with a greater level of decrease in the pilot areas.

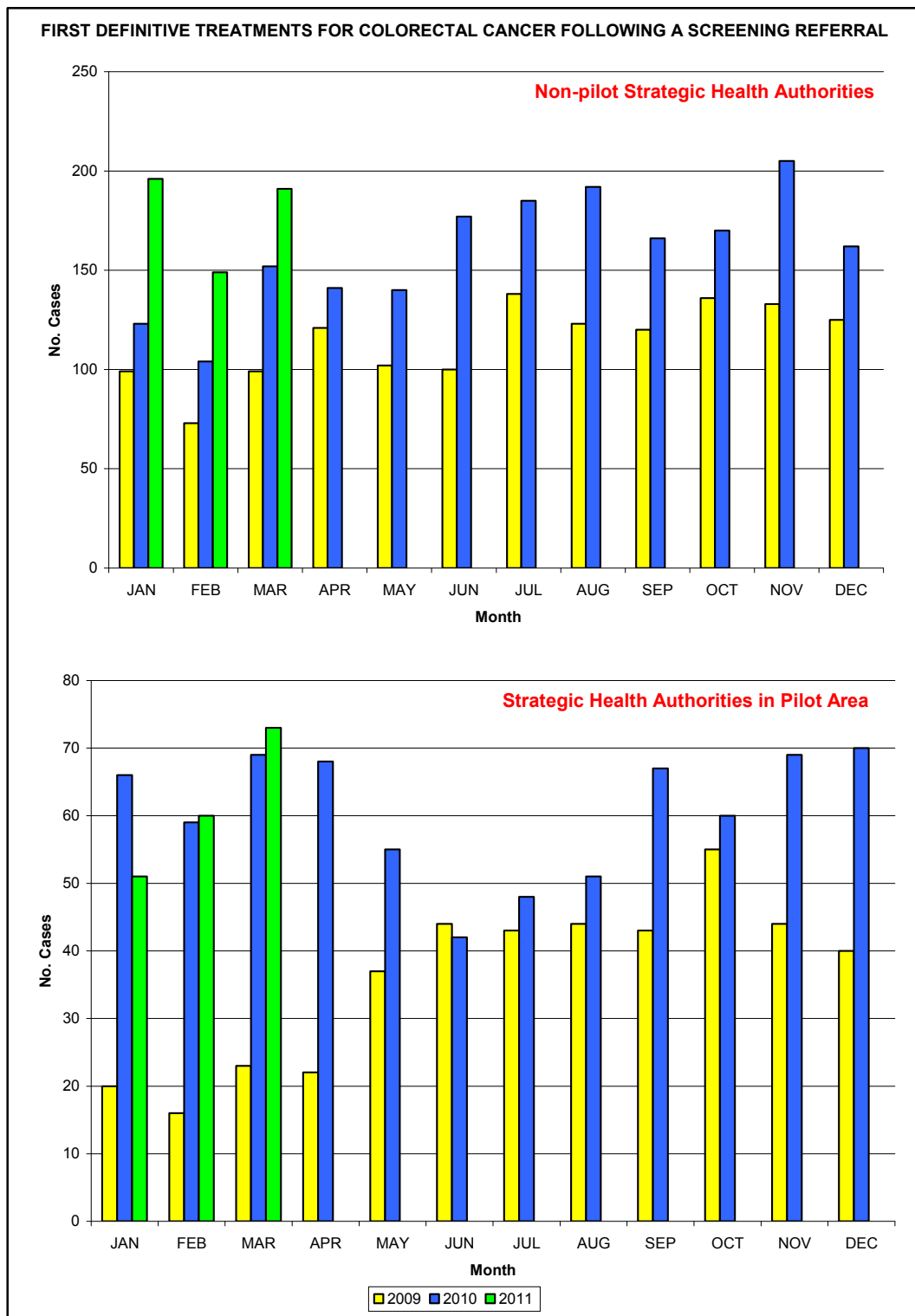
Figure 71 – % of all patients not urgently referred by their GP or an NHS Cancer Screening Service



Source: National Cancer Waiting Times Monitoring Dataset records (extracted from the CWT-Db) processed by Trent Cancer Registry (commissioner based)

Numbers of cancers receiving treatment as a result of a screening referral (Figure 72) shows that while levels in the non-pilot areas remain fairly constant during 2010/11, there does appear to be some fluctuation, with a slight increase in numbers identified through this route. However given the small numbers involved, caution is needed with interpretation.

Figure 72 – First definitive treatments for lower GI cancer following a screening referral

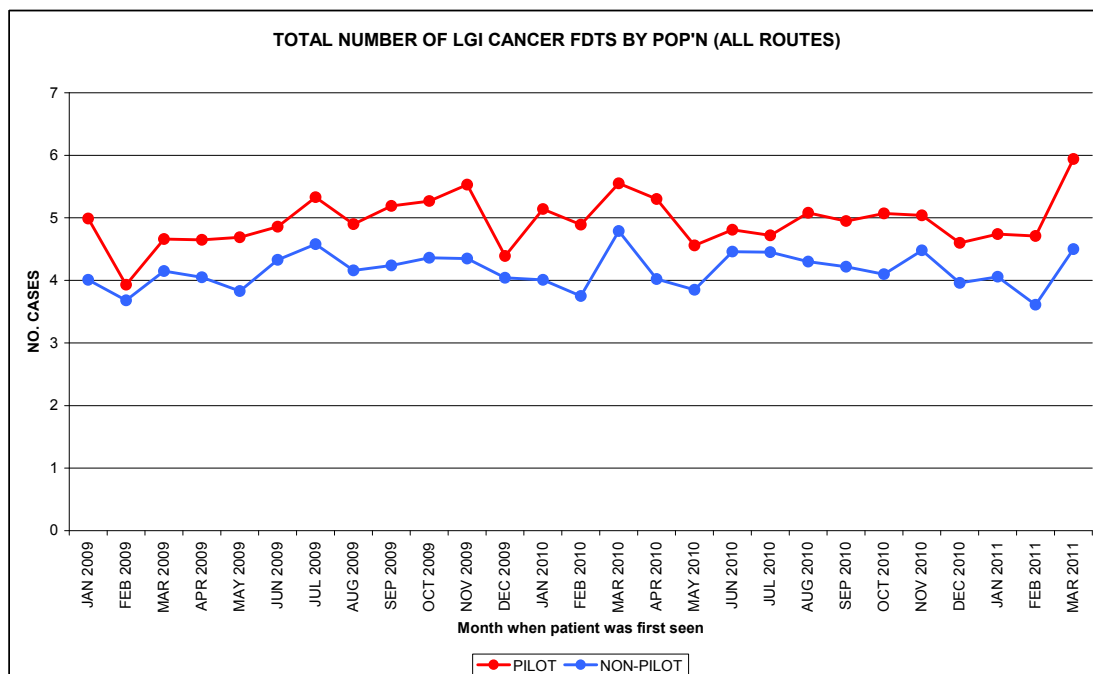


Source: National Cancer Waiting Times Monitoring Dataset records (collected using CWT-Db), processed by the Department of Health (commissioner based)

The numbers of patients per 100,000 population who received their first definitive treatment (Figure 73) shows variation over time. However there does seem to be a

peak in March 2011 for both pilot and non-pilot areas, with a greater peak in the pilot areas.

Figure 73 – Total number of lower GI cancers first definitive treatments per 100,000 population



Source: National Cancer Waiting Times Monitoring Dataset records (extracted from the CWT-Db) processed by Trent Cancer Registry (commissioner based)

Further detailed analysis was undertaken on data from the East of England to further examine conversion rates and the profile of those detected with cancer associated with the campaign period.

Figure 74 – Mean number of first specialist appointments, diagnosis and commencement of treatment by week in the East of England

Data Source	Point in patient pathway	February to June 2010 Mean (95% CI)	February to June 2011 Mean (95% CI)	February to August Mean (95% CI)	February to August Mean (95% CI)	Percentage change
Cancer Wait Times	First specialist appointment in secondary care	316.7 (304.2-329.22)	405.6 (381.1-430.1)			28.07%
	Start of treatment	56.8 (52.6-61.1)	73.1 (62.5-83.7)			28.70%
ECRIC	Diagnosis of cancer			78.7 (74.4-83.0)	73.4 (67.9-78.8)	-6.73%

Source: National Cancer Waiting Times Monitoring Dataset records (extracted from the CWT-Db) processed by the Eastern Region Cancer Registry and Information Centre (resident based)

Fig 74 shows that the mean number of new first specialist appointments following referral via the urgent GP referral (2WW) pathway increased significantly by 28% (from 317 in 2010 to 406 in 2011). A similar increase was seen in the number of those commencing treatment each week (57 in 2010, 73 in 2011). Both increases in secondary care activity were statistically significant.

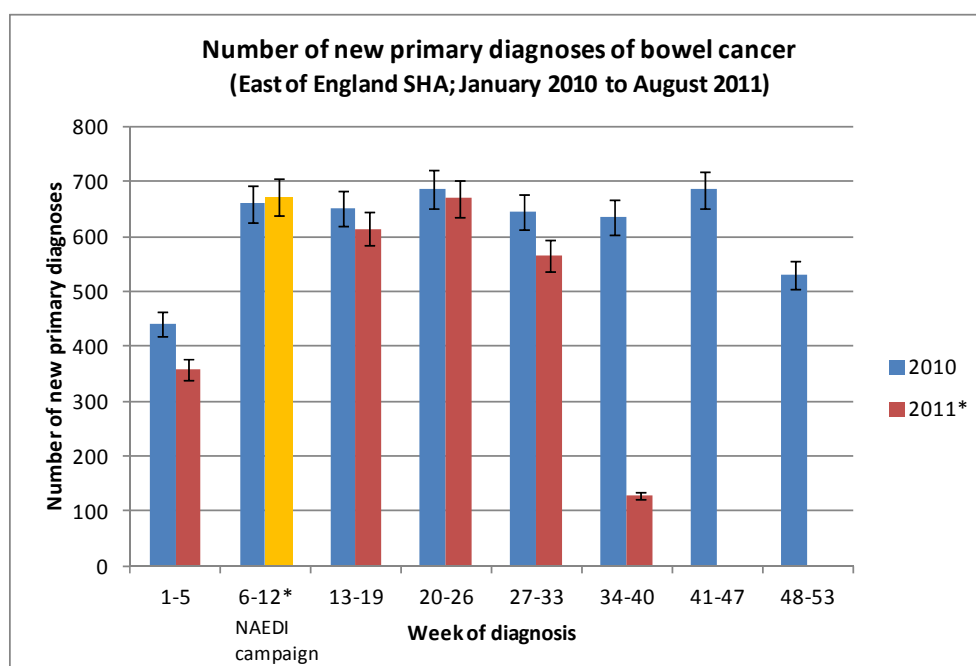
Registry data for February to August in both years appears to show almost a 7% decrease in the number of cases of cancer detected each week. This difference is not statistically significant and is likely to reflect the natural timelines of data flows into the registry together with more complete ascertainment of cancers registered at a later date in 2010.

Differences in actual numbers of those commencing treatment (Cancer Wait Times) and those with a definitive diagnosis (Registry) reflect differences in methodology, data collection, cut off dates, and patients, who may move to another area, refuse treatment, or be diagnosed at post mortem.

The table shows that in 2010, there were 317 weekly referrals to secondary care and an average of 79 new diagnoses of cancer, a conversion ratio of 1:4. In 2011 the conversion ratio is 1:5 (406 referrals leading and 73 cancer diagnoses). It is possible that this ratio may decrease when registry data is more complete and the analysis repeated at a later date.

Fig 75 shows the number of new cases of bowel cancer detected by 7 week periods. Assuming individuals who saw the campaign, which ran for a 7 week period, sought prompt medical advice, and were managed in a broadly similar fashion within primary care and then referred on to secondary care for diagnosis, it would be expected that there would be some form of cohort with an increased number of diagnoses clustering after the campaign. This has not been demonstrated.

Figure 75 – Number of new primary diagnoses of bowel cancer in East of England by 7-week period

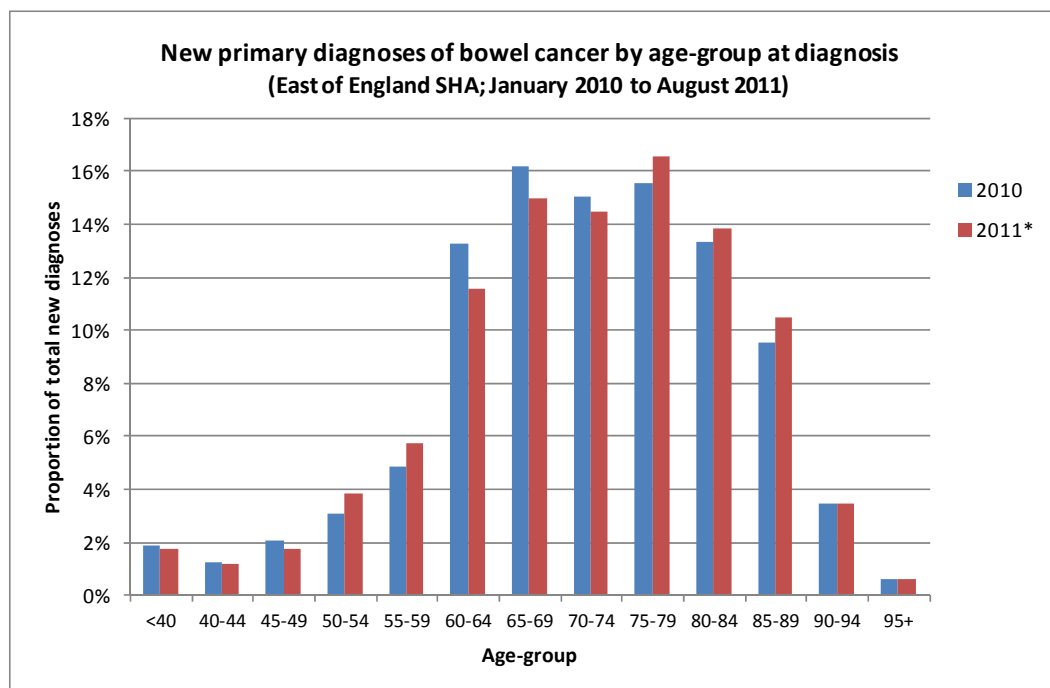


Source: Eastern Cancer Registry and Information Centre (ECRIC)

3) Age distribution of newly diagnosed cases

The age distribution of cancers diagnosed within and following the campaign in the East of England is shown below. This shows that the distribution is broadly similar to the previous year with a slightly higher proportion diagnosed in those 75 years and over.

Figure 76 – Age distribution of all patients with a new diagnosis of primary bowel cancer, at the time of diagnosis



Source: Eastern Cancer Registry and Information Centre (ECRIC)

Cancers prevented

While no new cancers were detected, it is likely that, as a result of polyp detection and removal at colonoscopy, some future cancers have been prevented.

It is adenomatous polyps that are considered pre-malignant. Adenomas constitute approximately 66% of polyps. Approximately 10% of adenomas are larger than 1 cm and approach a 10% chance of containing invasive cancer. The standard set for screening colonoscopies by NHS BCSP is a detection rate of 35% histologically confirmed adenomas. However the cohort who presented as a result of the campaign is unlikely to be the same as the screening cohort. Therefore it is reasonable to assume a lower adenoma detection rate would apply.

Assuming that 80% of the additional 4321 urgent GP referrals(2WW) made from February to June 2011 compared to the same period in 2010, led to colonoscopy, and that polyps were detected in either 10 or 20% of these, this would result in between 22 to 44 cases with large adenomas removed who would, as a result, be

included in a surveillance programme for future polyp detection to prevent cancers developing in these individuals in the future, This analysis should be viewed with great caution given the lack of robust evidence on the rate of polyp detection in this cohort, and therefore the number of assumptions that have had to be made.

Discussion of findings

There is no evidence of a significant increase in the number of new cases of cancer detected during the time period associated with the campaign either across the pilot areas or within them. Any variation is within normal limits.

Given that urgent GP referrals (2WW) increased considerably within the pilot period, yet there were no additional new cancers detected and conversion rates fell in the pilot areas. This shows that the additional urgent GP referral (2WW) activity was not of people diagnosed with cancer.

A number of factors may have led to this. The symptoms of bowel cancer are not specific to bowel cancer alone, and it not easy to distinguish this within primary care. Therefore it would appear that the campaign was successful in raising awareness of these symptoms, and changing behaviour by more people presenting to their GP with symptoms. This in turn led to an increase in urgent GP referrals (2WW), which should have adhered to the NICE criteria for referral for suspected bowel cancer. So why were no additional cancers detected?

i) The timescale for the campaign was too short.

However, given the overall increased numbers of urgent GP referrals for suspected cancer (2WW) (approx. 4,321 across both pilot areas from February to June 2011 compared to the similar period in 2010), and if previous conversion rates had continued, there should have been an increase in the number of new cancers of approx. 33%. However, this cannot be proven from available data.

ii) There was a difference in the population presenting to primary care.

It has been argued that there was an increase in “worried well”, i.e. that those with a very low risk of having bowel cancer, presenting as a result of the campaign. Bowel cancer increases with age, with 86% occurring in those >60 years old. Although there was an increase in overall presentations to primary care, there was no evidence of a significant difference between the proportion of those >50 years old and <50 years old presenting as a result of the campaign, with the exception of the Anglia Network.

iii) There was a difference in GP threshold for referral.

Referrals via the urgent GP referral (2WW) route should meet the NICE criteria, one of which is for patients to have experienced symptoms for 6 weeks¹². However the campaign itself used the period of 3 weeks. It is possible therefore that GPs may

¹² National Institute for Health and Clinical Excellence (NICE). Referral guidelines for suspected cancer (CG27). London 2005. www.nice.org.uk/CG27

have used the campaign time period rather than the NICE time period, thus reducing their threshold for referral, and so increasing the number of people referred. There was no way of assessing this within this evaluation. However, if it was the case, then given the lack of new cases of cancer detected, DH may wish to reconsider the choice to use of the 3 week rather than 6 week period in future campaigns. This highlights an issue that needs to be considered in any future campaigns where information to patients differs from published referral guidance.

The relatively greater increase in urgent GP referrals (2WW) of those referred who were <55 years old indicates that GPs were referring relatively more younger people than before the campaign, although in absolute terms the majority of referrals were for those >55 years old. Given that there was no evidence of a significant change in age distribution in those presenting (with the exception of Anglia network) this suggests that there was a change in GP referral patterns, and that GPs were referring relatively more younger people than before the campaign.

In terms of those who were detected as having cancer, it is encouraging to note that a higher proportion came through the urgent GP referral (2WW) path, which is the preferred route, rather than other routes such as emergency or routine. This suggests that patients were presenting appropriately to GPs, and GPs were picking them up as suspected cancers, which, particularly in the case of those who would have been detected as emergencies, should have led to an earlier diagnosis, before emergency care was necessary.

It would seem therefore that the campaign had a positive impact on the route of referral for those detected with cancer, probably in part by encouraging patients to present with their symptoms to a GP, and partly by encouraging GPs to recognise possible cases, either of which might otherwise have resulted in an emergency admission or routine referral.

Although no new cancers were detected, there will have been a number of cancers that will have been prevented as a result of polyp removal. It was not possible as part of this evaluation to capture data on the number of polyps removed. However it is highly likely that the increase in the number of symptomatic referrals will have led to an increase in the number of polyps removed, and hence a number of cancers will have been prevented, some of which will have been in people who would not have otherwise presented at this early stage.

It has been estimated that as a result of the additional activity generated between February and June 2011 there were between 22 to 44 cases with large adenomas removed who would, as a result, be included in a surveillance programme for future polyp detection to prevent cancers developing in these individuals in the future though these figures needed to be treated with caution given the number of assumptions that have been made in reaching this estimate.

Conclusion

1. The number of new diagnoses of cancer for both the East of England and South West regions combined during the period related to the campaign was

broadly similar to the number detected during the same period in the previous year.

2. There was an increase in new cancers in March 2011 in both regions; however this was not statistically significant and is likely to be due to small numbers.
3. While the number of cases diagnosed for the period related to the campaign is likely to increase over the next few months due to further identification of cases, it is not thought that this will result in many more new cases, and not enough to change the overall conclusions. This is confirmed by the data from East of England, where ascertainment is more complete.
4. In the East of England there has been no significant change in the age distribution of those diagnosed with primary bowel cancer
5. The increase in urgent GP referrals (2WW) for suspected cancer was in people who were not subsequently diagnosed with cancer. This might in part have been due to a change in GPs threshold for referral to the 3 week period for symptoms used in the campaign rather than the 6 week period advised by NICE; and in part due to the relative increase in referrals for those <55 years old.
6. The campaign appears to have had a positive effect by increasing the proportion of patients diagnosed with cancer being referred by the urgent GP referral route rather than other routes such as routine or emergency
7. Although no specific data was collected, it is reasonable to assume that given the increase in the number of symptomatic patients presenting, there will have been an increase in the number of polypectomies, with a subsequent increase in the number of cancers prevented. It has been estimated, based on a number of assumptions, that there were a possible 22 to 44 cases with large adenomas removed who would, as a result, be included in a surveillance programme for future polyp detection to prevent cancers developing in these individuals in the future, between February and June 2011.

6.7. Stage of cancers detected

The stage of a cancer refers to how advanced the cancer is at the time of diagnosis. The campaign may have impacted on the stage of those cancers diagnosed in one of two ways:

1. For those people with early symptoms who might otherwise have waited before presenting, but were prompted to present earlier, this might result in an earlier stage of diagnosis.
2. However there may be some people who had had undiagnosed cancer for some time, and who presented as a result of the campaign, and who subsequently had a late stage of cancer.

Depending on the proportion of people from these two groups, the proportion of cancers in each stage, diagnosed during and immediately after the campaign, might be altered, compared to what would normally be experienced.

Data sources

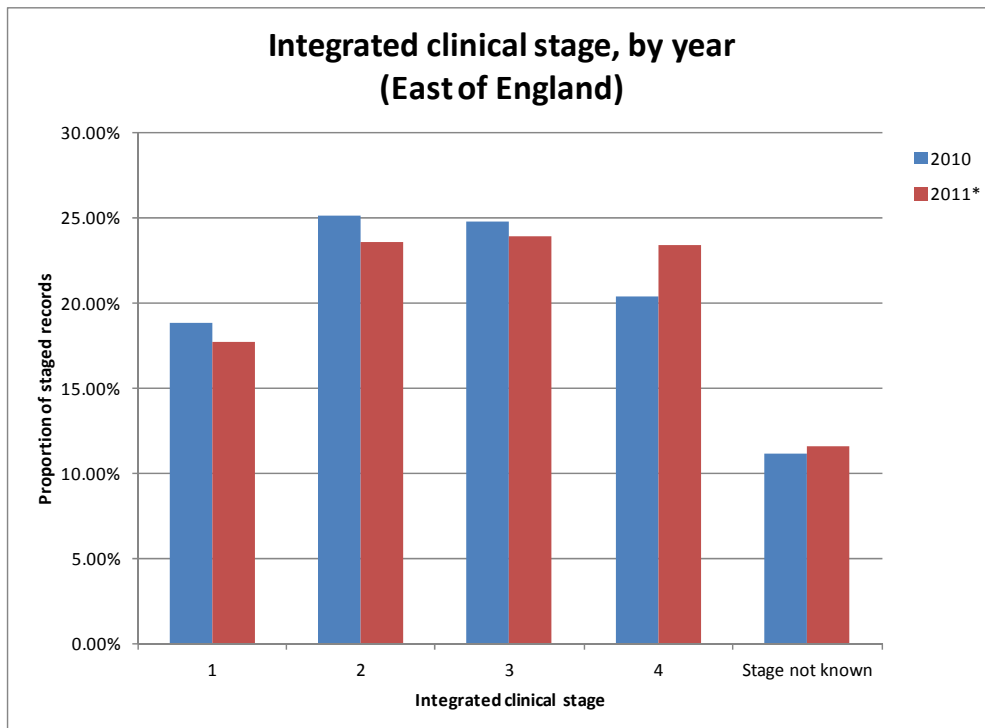
The data analysed were new cancers diagnosed as reported to ECRIC for cases living in the East of England only, as ECRIC staging data is considered more complete than that for the South West at the time of analysis. The analysis is based on data reported between January 2010 and August 2011.

Due to the time it takes for staging in some cases, the staging data is not thought to be complete. This will be particularly true for late stage cancers (Stage 4 or Duke's D), and so late stage cancers may be under-represented.

Results

The proportion of cancers detected at an early stage of disease (stage 1 and 2) compared with late stage disease (stages 3 and 4) was similar in 2010 compared to 2011 (fig 76). There was a slight increase in late stage cancers in 2011 but this may be due to the small numbers.

Figure 77 – New diagnoses of bowel cancer by stage at the time of diagnosis



Source: Eastern Cancer Registry and Information Centre (ECRIC)

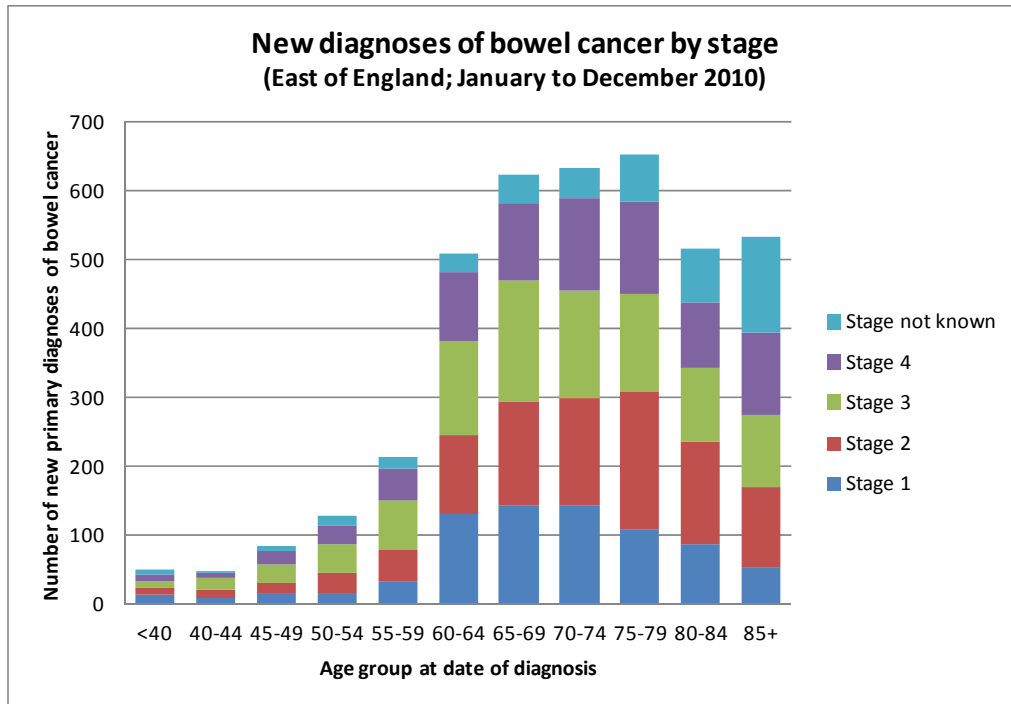
(*Information is based on diagnoses made between January and August 2011). 'Stage not known' includes records which are awaiting complete staging information

Approximately half of all cancers were detected at stage 1 or 2.

Age and gender profile

The majority of diagnoses were in those 60 years and older, with peaks in number for those aged 60–64 years in 2010 and those aged 70 – 74 years in 2011 (Figure 78).

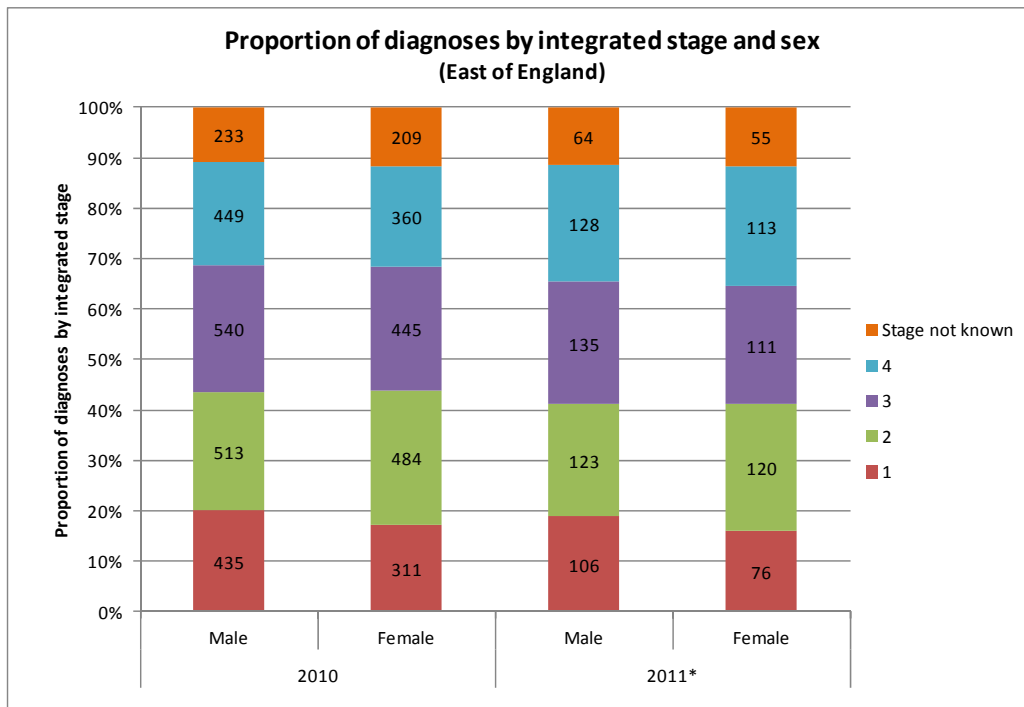
Figure 78 – New diagnoses of bowel cancer by stage and age group



Source: Eastern Cancer Registry and Information Centre (ECRIC)

There is no evidence of men being diagnosed at a later stage of disease compared with women diagnosed within the same year (Figure 79).

Figure 79 – New diagnoses of bowel cancer by stage and gender



Source: Eastern Cancer Registry and Information Centre (ECRIC)

Discussion of findings

There was no change in the stage of diagnosis of those cancers that were detected in the period associated with the campaign. It is unclear what, given the short timescale of the campaign, might have been expected. If there had been increased cancers detected, some of these may have been people who presented earlier than they would have otherwise, and so the overall stage would be expected to improve.

However, some may have been those who otherwise might have not presented at all and therefore have been within the “not staged” group, but this time would have had a late stage at diagnosis. These issues need to be borne in mind for the interpretation of any changes to stage as a result of future campaigns.

In addition it will be interesting to review the stage of diagnosis in the two pilot areas over the coming year or more, to see if there is any shift longer term as a result of people presenting earlier.

Conclusions

1. Based on the statistics available to ECRIC, there does not appear to be any significant change in the stage of diagnosis for cancers diagnosed in the East of England during and immediately after the campaign period. There appear to be marginally more late stage cancers detected in 2011, but this may be a factor of small numbers.
2. The age and sex distribution between the two periods remains broadly similar.

7. Discussion: Payback, ROMI and Cost per Result

In 2011, COI published “Evaluating the financial impact of public sector marketing communication: An introduction to Payback, ROMI and Cost per Result”¹³. This sets out a common approach to calculating:

1. Payback (the financial or economic effect of a campaign);
2. Return on Marketing Investment or ROMI (the number of pounds of payback per pound spent, once the activity has paid for itself); and
3. Cost per Result (the cost for each campaign result achieved, for example, cost per life saved).

The ability to calculate Payback and ROMI for an activity is contingent upon three main things. The ability to:

1. Calculate the costs of the activity.
2. Estimate the outcomes delivered by the activity (not by other factors); and
3. Calculate the financial or economic impact of each outcome.

For this campaign, calculating costs for production and media is straightforward. A more difficult element to estimate is the cost of the time and effort put into clinical engagement – the groundwork for the campaign. Also, the costs to stakeholders such as NCAT, CRUK and Bowel Cancer UK are difficult to estimate.

As we have seen in this document, it is very difficult to accurately estimate the number of earlier presentations caused, referrals made, colonoscopies carried out, diagnoses made, treatment given or lives saved as a result of the campaign.

Finally, the financial and economic impact of each of these outcomes above is also complex as there so many parties involved at each stage (including the NHS, private providers, the individual, their employer, their friends and family). This is a major obstacle to calculation of Payback and ROMI.

An avenue to explore for future evaluations may be to estimate the number of Quality Adjusted Life Years (QALYs) saved through prevention of cancers or earlier diagnosis; then to look at Cost per QALY saved in comparison with other interventions. However, given that in this case the only estimated outcome (number of adenomas) should be treated with caution – and given the other challenges noted above – this report will not attempt to make such an estimate.

One further approach to explore in future may be build a model to estimate the number of lives saved through prevention or earlier diagnosis and to consider the Value of a Prevented Fatality (VPF)¹⁴.

¹³ <http://coi.gov.uk/ROMI>

¹⁴ <http://www.dft.gov.uk/publications/updating-value-of-a-vpf-and-vpi>

Again, the evidence provided by this evaluation, while comprehensive, is not sufficiently robust to form the basis of such a model. Nor are agreed VPF values up-to-date or directly relevant (they are normally calculated around fatal accidents). But the most recent available VPF value does provide food for thought. In 2009, VPF was put at £1.59m¹⁵ – and the cost of this pilot campaign was, co-incidentally, £1.59m. While recognising the severe limitations of this comparison, it could therefore be suggested that if the pilot campaign resulted in just one life saved, it may have paid for itself.

¹⁵ Ibid, page 3, table 1.1

8. Overall discussion of findings

The campaign objectives were to:

1. Raise the awareness of the signs and symptoms of bowel cancer among the target audience (over 55s).
2. Increase the presentations of symptoms of bowel cancer by the target audience to primary care.

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

In terms of reach, the campaign was very successful. 75% of respondents in pilot areas recognised the adverts, compared to 46% in the control areas. TV advertising was the most cited source. The impact appears to have been lower in those aged 75 and over, which may represent differences in exposure to media advertising for this older group, and may need to be considered in future campaigns. It would seem that the campaign was effective in communicating its main message, with 95% in the pilot areas thinking the adverts were clear and easy to understand.

The campaign was not only effective in raising awareness among the target group, but also among GPs with 74% (unprompted) in the pilot area stating they were aware of it compared to 46% in the control. While in part this reflects the GPs exposure to the campaign itself, it also reflects the direct communication that went to GPs in the pilot areas. It might have been hoped that given this dual exposure to the campaign, that a higher proportion of GPs would have responded positively. However feedback identified that not all GPs received the communication, partly through difficulties with the mailshot and partly due to practices' own internal systems for dealing with such communication. This identifies an issue for any future campaigns where communication direct to GPs is a feature.

The campaign has also been effective in knowledge transmission, with an increase in unprompted knowledge about the two key symptoms from 19% to 38% in the pilot areas; and a reduction in those who didn't know any symptoms from 25% to 13%. Encouragingly this increase was almost entirely in the category "definitely a warning sign" indicating that respondents had more confidence in their knowledge as a result of the campaign. This is an important finding as, according to the Health Belief Model, confidence is a key factor influencing a person's ability to present to a GP with symptoms.

Acceptability and support for the campaign was very high among both the public (95%) and GPs (89%). This level of support is considered particularly high, and endorses the use of this campaign in the future.

So overall it can be concluded that the first objective was achieved among the target audience, (though less in those 75 and over); and also among local GPs.

In terms of the second objective, there is strong evidence of an increase in presentations to GPs for symptoms related to bowel cancer, with a 51.6% increase in

GP visits coded with the relevant Read codes between February and April 2010 compared to 2011. However there was considerable variation between the Networks, with the highest being 82% for Anglia, and 20.7% for MVCN. It is possible this relates in part to the different exposure to the TV element of the campaign.

While overall primary care presentations seemed to have been from those from the target group (55+s), in Anglia there was a greater increase in 30-49 year-olds. It is unclear why this difference might have occurred, as there does not appear to have been any major differences in the scope of the campaign, other than the possibility of the influence of the TV element. Further evidence is needed from the national campaign to see if differences in age groups presenting are seen in different areas, and the possible reasons behind this.

The GP Read code analysis only identifies whether there was an increase in bowel cancer related symptoms, and not the duration of those symptoms. This was a key message of the campaign – that symptoms should have been present for 3 weeks. However it is not possible from this analysis to identify what proportion of those presenting with symptoms fit this criteria, and so to evaluate the effectiveness of this element of the campaign directly.

The analysis is not able to fully assess how many presented as a result of having seen the campaign, but without the key campaign symptoms. While some attempt was made by using control symptoms, whose presentations fell during the period studied, this was not a comprehensive assessment. Therefore it is not possible to fully assess the total impact of the campaign on primary care presentations.

In addition it was not possible to identify from this evaluation the proportion of those who presented were referred to secondary care and the proportion who were not, and what happened to this latter group. These issues should be considered as part of the national evaluation.

The GP Read code analysis was the first time such an approach has been used on this scale and for this purpose. This campaign evaluation has identified the potential for accessing and interrogating GP Read code data to enable a more complete picture of service demand to be identified. While there are a number of issues with accessing such data, including: recruiting practices; identifying Read codes; systems compatibility and coding practices; this is, nevertheless, an underutilised source of data that has been demonstrated as able to provide important information, and its use should be explored further for similar activities.

A consequence of this increase in primary care presentations was the knock on effect in secondary care, with a significant increase in urgent GP referrals (2WW) for suspected bowel cancer. This increase is seen when comparing the pilot areas to non-pilot areas; and between Networks and Trusts. For most Trusts this equated to a more than 40% increase in activity in the peak month of March.

While all trusts had been notified of the campaign in advance and asked to plan for it, it is clear that many Trusts experienced difficulties meeting the increased demand. The anticipated increase in demand was not known accurately in advance, and this

would have contributed to the difficulties of planning for the uncertain. It would seem that there were different strategies used to deal with the demand, which impacted on other related workload, for example, planned colonoscopies. Because of the fluctuation and variation in demand between and within Trusts, it is difficult to accurately predict the likely impact of any future campaign for an individual Trust. However, the analysis does identify the range and duration of the campaign's impact. Work to help refine this further should be considered as part of the national evaluation, including identifying key factors that influence variation.

One of the factors that might have influenced levels of demand would have been any changes in GP referral thresholds during this period. Anecdotally there is a suggestion that some GPs followed the campaign timescale for symptoms of 3 weeks rather than the NICE timescale of 6 weeks. In practice for many patients this makes little difference, as the duration of such symptoms is notoriously hard to recall accurately. However for some it might have resulted in a referral that would not have been made previously. In addition there is evidence of relatively greater increase in the proportion of those under 55 years old compared to those over 55 years old who were referred as urgent GP referrals.

While the campaign led to an increase in bowel cancer related symptoms, there was no significant increase in the number of bowel cancers detected in the pilot areas in the period associated with the campaign. There may be a number of reasons for this. It is possible that the cohort of patients referred via the urgent GP referral (2WW) route was different to those referred before the campaign. Some evidence from Anglia suggests that younger patients were presenting to primary care there, although this was not replicated in the other areas. However there is evidence of a relatively greater increase in urgent GP referrals (2WW) of those under 55 years old. The 3 week timescale for symptoms might also have changed the nature of those referred. It might also be that there are a number of cancers not yet registered from this period – but this is not substantiated by the Cancer Registries themselves.

While there was no significant increase in cancers detected, there is evidence that there was an increase in the proportion of those cancers diagnosed that had been referred via the urgent GP referral route rather than other routes. In addition, as a result of the additional referral activity it is anticipated that there will have been an increase in polypectomies, and it has been estimated that there were between 22 to 44 cases with large adenomas removed who would, as a result, be included in a surveillance programme for future polyp detection to prevent cancers developing in these individuals in the future, based on activity between February and June 2011 in the pilot areas. Clearly caution needs to be exercised with these estimates as they are based on a number of assumptions. Further detailed work on capturing actual numbers of polypectomies and related pathology is intended as part of the national campaign evaluation, and is critical to identifying the full effect of this campaign.

In terms of supporting PCTs' local campaign initiatives, there have been some key outputs from the pilot that will help in the future. First the creative, including the Be Clear on Cancer branding, are a powerful and demonstrably effective resource for PCTs. The very positive evaluation of the materials used will allow PCTs to utilise this brand identity locally, and thus save considerable time and money in not having

to develop material for their own campaigns. Also, PCTs will benefit from the use of these materials at a regional or national level. This is particularly important given the impact of the TV element of the campaign. PCTs cannot afford this type of advertising, but being able to use brands that are associated with TV adverts will increase the impact of local work.

The use of the Read code methodology to help identify presentations to and impact on primary care is a significant legacy. The methodology should be able to be adapted for different cancer sites and wider use.

The importance of working with both primary care and secondary care providers in terms of demand management and campaign evaluation have also been highlighted as a result of this campaign.

Another important learning point from this evaluation is the importance of an evaluation framework that is agreed before the campaign and that identifies what data is needed and its source. It was possible to agree the details of such a framework before this pilot for the communications elements of the campaign – but while this considered clinical data it was not possible until writing this evaluation to know exactly what was needed and where it would come from. Consequently the availability of (and therefore evaluation of) clinical data has not been as complete as it might have been. However it has helped to identify data needs for future evaluations, and has proved helpful in developing a national campaign evaluation framework.

Overall, therefore, it would seem that the campaign has succeeded in achieving its stated objectives of raising awareness of bowel cancer symptoms and increasing presentations to primary care for bowel cancer related symptoms. It has also contributed valuable material and learning for local PCT and national initiatives.

While there was no significant increase in detection of new bowel cancers in the period associated with the campaign, it is estimated that approximately 22 – 44 cases resulted in polyp removal and subsequent surveillance to prevent future cancers.

One issue for debate arising from the campaign is the level of increased activity that it is appropriate and desirable to sustain in order to deliver these outcomes. Are there ways in which the clear benefits from the campaign can be realised while minimising the additional workload on primary and secondary care providers?

While there is no doubt that this campaign resulted in considerable additional work for both primary and secondary care, it also resulted in demonstrable changes in public knowledge and awareness of bowel cancer symptoms, together with changes in behaviour in terms of presentations to GPs and ultimately the likelihood of some cancers having been prevented.

9. Key Recommendations

The pilot campaign has provided valuable learning points for future campaigns aimed at increasing the awareness and knowledge of the signs and symptoms of cancer.

The strategic challenges for such campaigns will include understanding what level of investment will be required to generate the levels of awareness and knowledge and behaviour change demonstrated in this pilot; and identifying ways to realise the benefits of the campaign while minimising the additional workload generated in primary and secondary care. These challenges will be best addressed during the planning of those campaigns.

However, the recommendations that follow, based on the conclusions of this report, are aimed to address some of the more tactical challenges likely to arise when delivering and evaluating future campaigns.

1. Messages and creative approach for campaigns: for future bowel cancer campaigns the pilot messages and creative approach should be used as they have been shown to be acceptable and effective. For other cancers, materials should be developed and tested in the same way and could be adapted from those used in this pilot, making cost savings over a scenario in which materials are developed from scratch.
2. Channels used to deliver campaigns: all the channels and methods used in this pilot worked well together as part of a co-ordinated approach. Future campaigns should where possible use all these channels, considering the reach and frequency of exposure that they deliver and what each channel can bring to the campaign. For example, TV can deliver the greatest reach but face-to-face events can deliver a much deeper level of interaction.
3. Challenges in evaluating the reach of TV: in any pilot campaign it is necessary to have a “control” region that has definitely not been exposed to the campaign delivered in test regions. However, experience from this campaign has shown that it is extremely difficult to understand the exact reach of TV and line this up with PCT or SHA boundaries. For example, TV signals from one region can in fact be picked up in others via digital and satellite TV; and people from a control region can see TV in a pilot region by travelling. There is no simple solution to this problem but it should be considered as part of the planning of any pilot campaign.
4. Mailing GPs: in the pilot there were reports of practices not receiving communication about the campaign. DH should consider how best such mailings can be done in the future, and ways to identify those who do not receive communications quickly.
5. Planning for the impact of future campaigns in secondary care: it is clear that although Trusts had been asked to plan for this pilot, the lack of accurate information about the likely impact, together with other factors such as local

capacity and variations in local demand, meant that Trusts' responses varied. Further work to refine the range and duration of the campaign and what influences these; and to explore how Trusts can best plan for such campaigns, identifying good practice and different approaches, should be considered as part of the national campaign roll out.

6. Evaluation framework: as for this campaign, an evaluation framework should be agreed as early on in any future campaign development at local or national level. The framework should be realistic and include details about what objectives are to be evaluated, what metrics are currently available to the NHS, who manages these data, the data source and the collection timescale. There should be clear lines of responsibility and accountability for the production of the data. The scope of a framework should include the type of clinical measures analysed in this report, alongside those measures relevant to awareness and knowledge of symptoms. At the time of writing, DH is already working with the National Cancer Intelligence Network (NCIN) to plan the evaluation of the 2012 national campaign.
7. Additional data requirements for future evaluations: there were a number of relevant analyses that could not be carried out as part of this evaluation either because the required data are not currently collected or there were limitations with the available statistics. It is recommended that the availability of these data be considered as part of the evaluation of the national bowel cancer campaign.
 - a. For primary care these include:
 - i. further exploration of any geographical variation in the proportion of those who present who are outside the target age group;
 - ii. information about duration of symptoms in those who presented;
 - iii. the numbers of those presenting as a result of the campaign but who did not have symptoms associated with the campaign;
 - iv. the proportions of those who presented who were referred on to secondary care and those who were not; and
 - v. whether there was any change in referral threshold to secondary care by GPs using the 3 week campaign time period for urgent GP referral (2WW) rather than the NICE 6 week time period.
 - b. For secondary care these include:
 - i. data on polyp removal including numbers and histology;
 - ii. impact on histopathology services;
 - iii. numbers and type of adverse events;
 - iv. further information on the cohort of those referred as urgent GP referrals(2WW)
 - v. proportion of those referred via this route who proceeded to colonoscopy
8. Read codes: the use of Read coded data in primary care was innovative and has resulted in a general approach and methodology that should be considered at both local and national level for such initiatives. Expertise in this

approach should be developed more widely, perhaps within the Public Health Observatories, rather than, as at present, relying on a private provider.

10. Appendix 1 – Local activity out of scope of this report

11 PCTs (below) were known to be running Cancer activity using *Be Clear on Cancer* creative around the time of the pilot campaign. The 12th, Halton & St Helens, ran their own local creative. Given the information available it is difficult to say whether this activity could have affected the evaluation of the regional pilots.

Figure 80 – Local activity, early 2011

PCT	Tumour Type	Media Activity	Timings	Coverage
Thames Valley	Bowel & Lung	Regional Press & Radio	March-April	Not known
Medway	Lung	Bus street liners, 6 sheets & 48 sheets	March-May	TBC
Gloucestershire	Lung	Door drop	From 4 th April	TBC
Herefordshire	Lung	6 sheets & 48 sheets	28 th March to 25 th April	Not known
Leicester City	Bowel, breast & lung	Bus advertising	March	Not known
Hammersmith and Fulham	Bowel	Ad at QPR football match	5 th March	Not known
Croydon	Bowel, breast & lung	Outdoor	Not known	Not known
Doncaster	Bowel, breast & lung	PR	TBC	Not known
Hertfordshire	Not known	Not known	Not known	Not known
Sunderland	Not known	Not known	Not known	Not known
Liverpool	Bowel, breast & lung	Regional press, radio, 6 sheets	From 26 th March onwards	Not known
Halton and St.Helens	Bowel, breast & lung	Regional press & outdoor	17 th Jan to 27 th Feb	TBC