



Public Health
England

Protecting and improving the nation's health

National Cancer Intelligence Network **Be Clear on Cancer: ovarian cancer** **awareness regional pilot campaign**

Interim evaluation results

About Public Health England

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

Public Health England
Wellington House
133-155 Waterloo Road
London SE1 8UG
Tel: 020 7654 8000
www.gov.uk/phe
Twitter: @PHE_uk
Facebook: www.facebook.com/PublicHealthEngland

Prepared by: National Cancer Intelligence Network
For queries relating to this document, please contact: enquiries@ncin.org.uk

© Crown copyright 2015

You may re-use this information (excluding logos) free of charge in any format or medium, under the terms of the Open Government Licence v3.0. To view this licence, visit [OGI](http://www.nationalarchives.gov.uk/ogl) or email psi@nationalarchives.gsi.gov.uk. Where we have identified any third party copyright information you will need to obtain permission from the copyright holders concerned. Any enquiries regarding this publication should be sent to enquiries@ncin.org.uk.

Published February 2015
PHE publications gateway number: 2014681

This document is available in other formats on request. Please call 020 7654 8158 or email enquiries@ncin.org.uk



The intelligence networks

Public Health England operates a number of intelligence networks, which work with partners to develop world-class population health intelligence to help improve local, national and international public health systems.

National Cancer Intelligence Network

The National Cancer Intelligence Network (NCIN) is a UK-wide initiative, working to drive improvements in cancer awareness, prevention, diagnosis and clinical outcomes by improving and using the information collected about cancer patients for analysis, publication and research.

National Cardiovascular Intelligence Network

The National cardiovascular intelligence network (NCVIN) analyses information and data and turns it into meaningful timely health intelligence for commissioners, policy makers, clinicians and health professionals to improve services and outcomes.

National Child and Maternal Health Intelligence Network

The National Child and Maternal Health Intelligence Networks (NCMHIN) provides information and intelligence to improve decision-making for high quality, cost effective services. Their work supports policy makers, commissioners, managers, regulators, and other health stakeholders working on children's, young people's and maternal health.

National Mental Health Intelligence Network

The National Mental Health Intelligence Network (NMHIN) is a single shared network in partnership with key stakeholder organisations. The Network seeks to put information and intelligence into the hands of decision makers to improve mental health and wellbeing.

National End of Life Care Intelligence Network

The National End of Life Care Intelligence Network (NEoLCIN) aims to improve the collection and analysis of information related to the quality, volume and costs of care provided by the NHS, social services and the third sector to adults approaching the end of life. This intelligence will help drive improvements in the quality and productivity of services.

Contents

About Public Health England	2
The intelligence networks	2
Contents	4
Executive summary	5
Introduction	8
Public awareness and knowledge	10
Urgent GP referrals for suspected cancer and related cancer diagnoses	12
Methods	12
Urgent GP referrals for suspected cancer	18
Cancer diagnoses resulting from an urgent GP referral for suspected cancer	23
Conversion rate	28
Cancer diagnoses recorded in the Cancer Waiting Times database	32
Detection rate	37
Appendix 1: List of tables	41
Appendix 2: List of figures	42

Executive summary

A regional ovarian cancer awareness campaign ran in the North West of England (Granada TV region) from 10 February to 16 March 2014. The campaign's key message was 'Feeling bloated, most days, for three weeks or more could be a sign of ovarian cancer. Tell your doctor'.

A full and final evaluation report for the regional pilot ovarian campaign will be published when the analysis of all metrics is complete. In advance of the final evaluation report, this interim report provides the results available to date.

For the ovarian cancer awareness regional pilot campaign, the pre and post awareness surveys among the public showed that there was good recognition of the campaign and strong recall of the bloating symptom. In addition the campaign message of bloating was regarded as a new information. The campaign also appears to have caused an increase in the number of urgent GP referrals for suspected gynaecological cancers in the regional pilot area, particularly for younger age groups. However, this increase in the number of referrals does not appear to have affected the number of cancers diagnosed after an urgent GP referral for suspected gynaecological cancer, with little change in the conversion rate or the detection rate.

The following points form a summary of the main results detailed in this report:

Public awareness and knowledge

- 1.1 The focus on a single new message (bloating as a symptom) for the ovarian cancer campaign resulted in a higher stand out and increased understanding of the key message.
- 1.2 The focus on the new message may have been a driver for the high level of response seen for the ovarian cancer campaign: one in three claimed that they had taken action having seen the ovarian cancer advertisements. This is the highest response level seen in any Be Clear on Cancer regional pilot campaign.

Urgent GP referrals for suspected gynaecological cancers

- 1.3 The results provide some evidence that the regional pilot campaign increased the number of referrals for gynaecological cancers in the pilot area in February-April 2014 above the background increase, particularly for younger age groups.

- 1.4 There was a larger relative increase in referrals for suspected gynaecological cancers in the regional pilot area (24%) than in the control area (16%) when comparing February-April 2014 with February-April 2013.
- 1.5 This relative increase in referrals for suspected gynaecological cancers in the regional pilot area was also larger than the increase in referrals for suspected head and neck cancers ¹(19%). In the control area, the number of referrals for suspected head and neck cancers increased more than the number or referrals for suspected gynaecological cancers.
- 1.6 All age groups in the regional pilot area had statistically significant increases in the number of referrals for suspected gynaecological cancers. The largest increase was for the under 50 age group (35%) and the smallest increase for the 70 to 79 age group (14%).

Conversion rate of urgent GP referrals for suspected gynaecological cancer

- 1.7 This analysis found no evidence of an impact from the ovarian cancer awareness regional pilot campaign on the number of ovarian or gynaecological cancer diagnoses resulting from an urgent GP referral for suspected gynaecological cancers, or on the conversion rate to either ovarian or gynaecological cancers of urgent GP referrals for suspected gynaecological cancers in February-April 2014.
- 1.8 There were no statistically significant changes in the number of ovarian cancers resulting from an urgent GP referral for suspected gynaecological cancer either overall or for any individual age group when comparing February-April 2013 and February-April 2014.
- 1.9 There were no statistically significant changes in the number of gynaecological cancers resulting from an urgent GP referral for suspected gynaecological cancers either overall or for any individual age group when comparing February-April 2013 and February-April 2014.
- 1.10 The conversion rate appeared to be lower in February-April 2014 than February-April 2013, consistent with the apparent long-term decreasing trend, related to an increasing trend in the number of referrals .

¹ For an “other referrals” comparator in the cancer waiting times analysis, we have used referrals for suspected head and neck cancers for recent evaluations, as this is a common referral type less likely to have been affected by campaigns, with no specific campaign directed at it.

Detection rate for gynaecological cancer

- 1.11 This analysis found no evidence of a positive impact from the ovarian cancer awareness regional pilot campaign on the number of or the detection rate for gynaecological or ovarian cancer diagnoses recorded in the Cancer Waiting Times database in March-May 2014.
- 1.12 There were no statistically significant changes in the number of or the detection rate for gynaecological cancer diagnoses either overall or for any individual age group when comparing March-May 2014 with March-May 2013.
- 1.13 There were no statistically significant changes in the number of or the detection rate for ovarian cancer diagnoses either overall or for any individual age group when comparing March-May 2014 with March-May 2013.

Introduction

Be Clear on Cancer awareness campaigns

Be Clear on Cancer campaigns have been developed to improve early diagnosis by raising awareness of the symptoms of cancer and encouraging people with those symptoms to see their GP early.

The Be Clear on Cancer brand has been used to promote awareness and early diagnosis of specific cancer types since January 2011. The ovarian cancer local campaign was developed using the Be Clear on Cancer branding and ran from 14 January to 17 March 2013. The programme is led by Public Health England, working in partnership with the Department of Health and NHS England. Each campaign is tested locally and then regionally, with a view to rolling them out nationally if they prove to be effective.

For each Be Clear on Cancer campaign there is a comprehensive evaluation process. Data is collected on a number of metrics to reflect possible campaign impact. These include whether campaigns are raising awareness of signs and symptoms of cancer; more people are going to their GPs with the symptoms highlighted by the campaign; more people are being referred urgently for suspected cancer; there is an increase in diagnostic activity; those referred urgently for suspected cancer are diagnosed with cancer; there are increases in the number of cancers diagnosed and if there is evidence of a shift towards earlier stage disease.

Ovarian cancer awareness regional pilot campaign

A local Be Clear on Cancer campaign featuring the symptoms of ovarian cancer was developed and run in four areas from 14 January to 17 March 2013. After evaluation of the local ovarian campaign it was decided to develop a regional campaign.

The ovarian cancer awareness regional pilot campaign ran in the North West of England (Granada TV region) from 10 February to 16 March 2014. The campaign's key message was 'Feeling bloated, most days, for three weeks or more could be a sign of ovarian cancer. Tell your doctor'.

The regional ovarian cancer campaign used a range of channels to target the age group most at risk of ovarian cancer – women 50 years old and over. These included television, radio, press, online and out of home advertising. The campaign also included face to face events in shopping centres and the distribution of leaflets via GP surgeries and other outlets such as pharmacies.

Evaluation of the ovarian cancer awareness regional pilot campaign

The evaluation of the campaign covers a number of different metrics, which together will give a detailed picture of the potential campaign effects. However, it takes longer to collate and analyse the data necessary for some metrics than for others.

For the regional pilot in the North West, we have so far been able to look at the following metrics:

- campaign awareness
- cancer awareness levels
- urgent GP referrals for suspected gynaecological cancers
- ovarian cancer diagnoses resulting from an urgent GP referral for suspected gynaecological cancers
- conversion rate (percentage of urgent GP referrals for suspected gynaecological cancer resulting in a cancer diagnosis)
- ovarian cancer diagnoses recorded in the Cancer Waiting Times database
- detection rate (percentage of ovarian cancer diagnoses recorded in the Cancer Waiting Times database resulting from an urgent GP referral for suspected gynaecological cancer)

For the regional pilot ovarian campaign, further analysis will include:

- GP attendances
- diagnostic tests, including CA125
- numbers of cancers recorded by the National Cancer Registration Service
- stage at diagnosis
- one year survival

A full and final evaluation report for the regional pilot ovarian campaign will be published when analysis of all metrics is complete. In advance of the final evaluation report, this interim report provides the results available to date.

Public awareness and knowledge

Research methodology

The research was conducted through pre and post campaign surveys in test and control areas. The test area was the North West for the ovarian cancer campaign. The rest of England (excluding the North East, as a similar oesophago-gastric regional pilot campaign ran at the same time in this area) provided the control area. Samples of approximately 300 women aged 50 plus were interviewed face to face in both the pilot and control areas and at both pre and post stages.

The research was conducted by TNS-BMRB, who are an independent market research agency specialising in social research. The survey was a face to face survey among a representative sample of adults aged 50 plus in England. This was supplemented with additional face to face interviews in the North West pilot region. The pre campaign interviews took place between 13 January 2014 and 2 February 2014 and the post campaign interviews took place between 17 March 2014 and 6 April 2014.

Campaign awareness and recognition

In both the pilot and control regions three quarters (77%) of respondents were aware of cancer advertising or publicity before the campaign. While awareness at the post stage increased significantly in the pilot region (87%), the same effect was not seen in the control region suggesting that the Be Clear on Cancer campaign contributed to this rise.

In the pilot region at the post stage, two thirds (66%) of those who recalled seeing or hearing something about cancer symptoms spontaneously recalled this as being about bloating, which was up from 12% at the pre stage and compared with 7% in the control region at the post stage.

In the pilot region, three quarters (76%) recognised at least one of the ovarian cancer campaign materials. Recognition levels of the ovarian cancer television and radio advertisements were the highest of any Be Clear on Cancer regional pilots (71% and 33% respectively), while the press/poster advertisements had below average recognition (25%) and the leaflets performed in line with average (19%). This indicates that the television and radio advertisements benefitted from the combined effect of both having a similar storyline. While press and posters still gave the same key message, the shared narrative set up within the television and radio advertisements is likely to have strengthened their mutual recognition.

Campaign communication

The campaign performed very well in terms of standing out from other advertising and being seen as new information (79% and 66% respectively). These were the highest levels of agreement recorded across the six Be Clear on Cancer regional pilot campaigns. Seven in ten (69%) agreed that the advertising was relevant to them, which was in line with the average.

As with other Be Clear on Cancer advertising, there was near universal agreement that the ovarian cancer advertisements were important and easy to understand (both 95%).

Knowledge of ovarian cancer symptoms

There was an overall significant increase in confidence in the knowledge of ovarian cancer symptoms, rising from 23% before the campaign to 32% afterwards. There was no increase in the control region. In addition there were encouraging increases in prompted knowledge of a range of symptoms of ovarian cancer symptoms including:

- feeling bloated most days for three weeks or more (significant increase from 25% to 40% saying “definitely”)
- feeling full quickly on a regular basis (significant increase from 32% to 44% saying “probably”)
- persistent stomach pain (significant increase from 48% to 61% saying “probably”)

There were no increases in the control region.

Action taken as a result of the campaign

Nine in ten (89%) agreed that the advertising made them more likely to go to the GP if they had any of the symptoms featured in the campaign. This was the highest level across all six regional Be Clear on Cancer pilots. One in three (35%) of those who had seen the campaign had taken some action as a result, also at the highest level of all the regional pilots.

The most commonly taken action was making an appointment to talk to the GP (21%) and 7% considered making an appointment. Softer actions such as visiting the NHS website and talking to friends and family came through at lower levels.

Urgent GP referrals for suspected cancer and related cancer diagnoses

This chapter considers whether the ovarian cancer awareness regional pilot campaign had an impact on the number of urgent GP referrals for suspected gynaecological cancers or on Cancer Waiting Times (CWT) recorded information on gynaecological cancer diagnoses.

Methods

Metric definitions

Analysis considers the following metrics, all derived from the Cancer Waiting Times data:

Urgent GP referrals for suspected cancer (R)

Urgent GP referrals for suspected gynaecological cancer, presented by month first seen.

(Also known as two week wait (TWW) referrals.)

Cancer diagnoses resulting from an urgent GP referral for suspected cancer (TC)

Those gynaecological cancer diagnoses (ICD10 C51-C58) resulting from an urgent GP referral for suspected gynaecological cancers, presented by month first seen.

(Also known as two week wait (TWW) cancers, or 62 day cancers [based on the waiting times target from urgent GP referral to first treatment].)

Conversion rate (C)

Percentage of urgent GP referrals for suspected gynaecological cancers resulting in a diagnosis of gynaecological cancer, presented by month first seen.

Cancer diagnoses recorded in the Cancer Waiting Times database (CC)

All gynaecological cancer diagnoses recorded in the CWT database (CWT-Db), presented by month of first treatment.

(Also known as CWT cancers, or 31 day cancers [based on the waiting times target from decision to treat to first treatment].)

Detection rate (D)

Percentage of CWT-Db recorded gynaecological cancer diagnoses which resulted from an urgent GP referral for suspected gynaecological cancers, presented by month of first treatment.

When patients are referred, cancer is only a suspicion, with the cancer or other diagnoses to be confirmed. As a result, specific cancer type diagnoses are unknown and so urgent GP referrals for suspected cancer are recorded against a limited number of broad cancer types. One of these broad cancer types is gynaecological cancers, incorporating ovarian cancers, along with several other types of cancer (for example, uterine and cervical). Therefore, these analyses are repeated for diagnoses of all gynaecological cancers and ovarian cancer (ICD10 C56-C57), although both related to all urgent GP referrals for suspected gynaecological cancers.

Defining the campaign period

The campaign ran from 10 February to 16 March 2014. Therefore we might expect an impact on referrals first seen during the campaign months (February and March) and, allowing for reasonable delays from campaign activity to referral, in the month following the end of the campaign (April). These delays may occur for several reasons, for example:

- some patients may need to see the campaign materials multiple times before reacting
- some patients may need to wait for a GP appointment, especially if they prefer a convenient time or a specific GP, and so may be seen by the GP after the campaign ended
- dates are based on 'date first seen' as recorded in the CWT-Db, reflecting the date seen in secondary care rather than primary care, and referrals made towards the end of the campaign may not have been seen in secondary care until after the campaign ended

Therefore the period from February-April 2014 was considered as the "campaign period" for referrals, and also for cancer diagnoses resulting from an urgent GP referral for suspected cancer and for the conversion rate, as these were defined using the date first seen recorded for the referral.

There is a necessary period of time between the date first seen following an urgent GP referral for suspected cancer and the start of treatment. This is because of the time required to perform diagnostic tests or to plan and arrange treatment, for example, and will vary for different patients and trusts. This meant that, for cancer diagnoses recorded in the CWT database and the detection rate, it was not possible to identify a clear period relating directly and specifically to the campaign. Diagnoses in the early campaign months could include those resulting from referrals prior to the campaign or at the beginning of the campaign. Similarly, diagnoses in the months after the campaign could include those resulting from referrals during the campaign or after the end of the campaign. Taking into consideration the average interval from date first seen to treatment start date, and the waiting times target of 62 days from urgent GP referral to

first treatment, the period from March-May was thought to best represent the campaign effect. This period should include many of the diagnoses resulting from campaign period referrals without too many diagnoses from pre- or post-campaign referrals.

Therefore the period from March-May 2014 was considered as the “campaign period” for gynaecological cancer diagnoses recorded in the CWT-Db and for the detection rate.

Comparator referral types

The number of urgent GP referrals for suspected cancer has continued to increase year-on-year. This means that the evaluation’s comparison of the change from one year to the next is likely to reflect a combination of the campaign’s impact and the general increase in referrals. It is not possible to separate these two reasons for any particular referral type, but it is useful to consider the change in referrals for other suspected cancers to provide an indication of increase that was not associated with the campaign.

However, due to the impact of previous regional and national Be Clear on Cancer campaigns, it was necessary to exclude a number of campaign-affected referral types from this comparison. Therefore, analysis of the change in referrals for other suspected cancers only considered referrals for suspected head and neck cancers.

Guide to presentation

As the analysis considers a number of breakdowns, the following numbering system has been used throughout the chapter:

1. Total
2. By age

For total referrals only, with nested results to consider how changes in gynaecological referrals may differ from general referral changes:

- a. Referrals for suspected gynaecological cancers
- b. Referrals for suspected head and neck cancers

For other metrics, with nested results to consider how changes for gynaecological or ovarian cancers may differ:

- a. Results for ovarian cancer
- b. Results for gynaecological cancers

For the campaign period (February-April 2014), the number of urgent GP referrals for suspected gynaecological cancers were presented, alongside comparable results for the same months in the previous year. Year-on-year percentage change figures were calculated based on these referral counts, as this reflected the absolute change in levels of activity. A referral rate was also presented, in order to provide some context to

explain how differences in the percentage change between areas (or ages) may relate differing referral patterns. Differences in referral rates would suggest there may be underlying differences in referral practices or cancer incidence between groups. It was not possible to assess whether any apparent campaign impact may have resulted from these underlying differences.

Data for gynaecological cancer diagnoses resulting from an urgent GP referral for suspected gynaecological cancers and conversion rate were presented for the campaign period (February-April 2014), alongside comparable results for the same months in the previous year and the year-on-year percentage point change in the rate.

Data for gynaecological cancer diagnoses recorded in the CWT-Db and detection rate were presented for the campaign period (March-May 2014), alongside comparable results for the same months in the previous year and the year-on-year percentage point change in the rate.

As this report considers a regional pilot campaign, most results were presented for the regional pilot area only. For the purposes of analysis this area was defined using the former Lancashire and South Cumbria; Greater Manchester and Cheshire; and Merseyside and Cheshire Cancer Network areas. For overall results, comparison is made to a control area, which was defined as England excluding both the regional pilot area and local pilot areas. For the ovarian campaign, the local pilot areas were the following 7 former cancer networks: Yorkshire; North East Yorkshire and the Humber; Thames Valley; Anglia; Essex; North Trent; and Mount Vernon.

Statistical methods

Urgent GP referral rates vary greatly with age. To take account of differing age profiles of patients in different areas, the rates presented here were directly age-standardised and presented as rates per 100,000 population using the 2013 European Standard Population weights. Age-specific crude referral rates were presented for the age breakdown.

For referrals and cancer diagnoses, the reported p-values were obtained from a likelihood ratio test. The null hypothesis was that the number of urgent GP referrals or cancer diagnoses in the campaign period in 2014 and the same months in 2013 came from the same Poisson distribution.

For conversion and detection rates, the reported p-values are obtained from a two-sample proportion test. The null hypothesis was that the rate in the campaign period in 2014 was equal to the equivalent rate in 2013.

P-values less than 0.05 indicate a statistically significant difference between the two periods, at the 95% level. This chapter provides results from a large number of statistical tests. Please note that, with a considered significance level of 95%, you could expect 5% of tests to provide a “statistically significant” result by chance.

Data notes

Please note that there were a few data quality issues:

- Chelsea and Westminster Hospital NHS Foundation Trust did not provide treatment data for March 2013 due to data quality problems; this may affect some of the results for the control area
- Imperial College Healthcare NHS Trust did not provide referrals or treatment data for December 2011 to April 2012; this may affect some of the results for the control area provided in the trend charts
- Central Manchester University Hospitals NHS Foundation Trust did not upload all referral data for October-December 2012; this may affect some of the results for the control area presented in the trend charts
- for Colchester Hospital University NHS Foundation Trust, it is known that some Cancer Waiting Times records were submitted incorrectly, with ongoing investigations into data quality for this trust; data used for these analyses are as submitted. The number of records and time-period affected by these incorrect submissions are currently unknown, but it is expected that this will have a very limited impact on these results
- of 271,998 TWW referrals for suspected gynaecological cancers, 403 were excluded from the analysis (159 due to missing demographics; 154 due to null or invalid postcodes; and 90 due to recorded male sex)
- of 275,878 TWW referrals for suspected head and neck cancers, 122,783 were excluded from the analysis (148 due to missing demographics; 182 due to null or invalid postcodes; and 122,480 due to recorded male sex)
- of 33,012 gynaecological cancers recorded in the CWT-Db, including 10,088 ovarian cancers, 57 were excluded from the analysis (31 due to missing demographics; 20 due to null or invalid postcodes; and 6 due to recorded male sex)
- of 17,035 cancer diagnoses resulting from an urgent GP referral for suspected gynaecological cancers, including 15,738 gynaecological cancers of which 4,263 were ovarian cancers, 19 were excluded from analyses (9 due to missing demographic information; 6 due to null or invalid postcodes; and 4 due to recorded male sex)

Monthly diagnoses, conversion rate and detection rate data can be quite variable because they are based on only a small number of cancer diagnoses, particularly for some of the smaller breakdowns. For this reason, some of the age groups are not plotted on the monthly trend charts, and some trend charts are quarterly rather than monthly.

Data source

Cancer Waiting Times data was obtained from the National Cancer Waiting Times Monitoring Dataset, provided by NHS England.

Urgent GP referrals for suspected cancer

Total results

There was a clear upward trend in the number of referrals for suspected gynaecological cancers (Figures R1ai, R1aii), with statistically significant increases in both the regional pilot area and the control area (Table R1a). The increase in the regional pilot area, 24%, was larger than that observed for the control area, 16%.

In the regional pilot area, the increase in referrals for suspected head and neck cancers was 19% (Table R1b), which was smaller than the increase in referrals for suspected gynaecological cancers. In the control area, the 19% increase in referrals for suspected head and neck cancers was larger than the increase in referrals for suspected gynaecological cancers.

Figures R1ai, R1aii, R1bi and R1bii all show a similar pattern of historical fluctuations in referrals for suspected cancer for either gynaecological cancers or head and neck cancers. Some of this may be due to some wider effect of previous Be Clear on Cancer awareness campaigns, along with natural monthly variations, but the reasons cannot be identified from these data.

Table R1a: Number of urgent GP referrals for suspected gynaecological cancers, with referral rate and percentage change in number of referrals, from February-April 2013 and February-April 2014

Overall		February-April				
		Referrals	% Change in number	P-value	Referral rate Estimate	Referral rate 95% CI
Regional pilot area	2013	3,666	24.0	<0.001	473.4	(458.1, 489.0)
	2014	4,545			585.4	(568.5, 602.8)
Control area	2013	17,385	15.5	<0.001	474.2	(467.2, 481.4)
	2014	20,085			548.0	(540.4, 555.7)

Table R1b: Number of urgent GP referrals for suspected head and neck cancers, with referral rate and percentage change in number of referrals, from February-April 2013 and February-April 2014

Overall		February-April				
		Referrals	% Change in number	P-value	Referral rate Estimate	Referral rate 95% CI
Regional pilot area	2013	2,172	19.3	<0.001	279.9	(268.2, 291.9)
	2014	2,592			334.3	(321.5, 347.5)
Control area	2013	9,720	18.6	<0.001	261.3	(256.1, 266.6)
	2014	11,528			310.9	(305.2, 316.7)

Figure R1ai: Monthly number of urgent GP referrals for suspected gynaecological cancers from January 2012-April 2014, regional pilot area

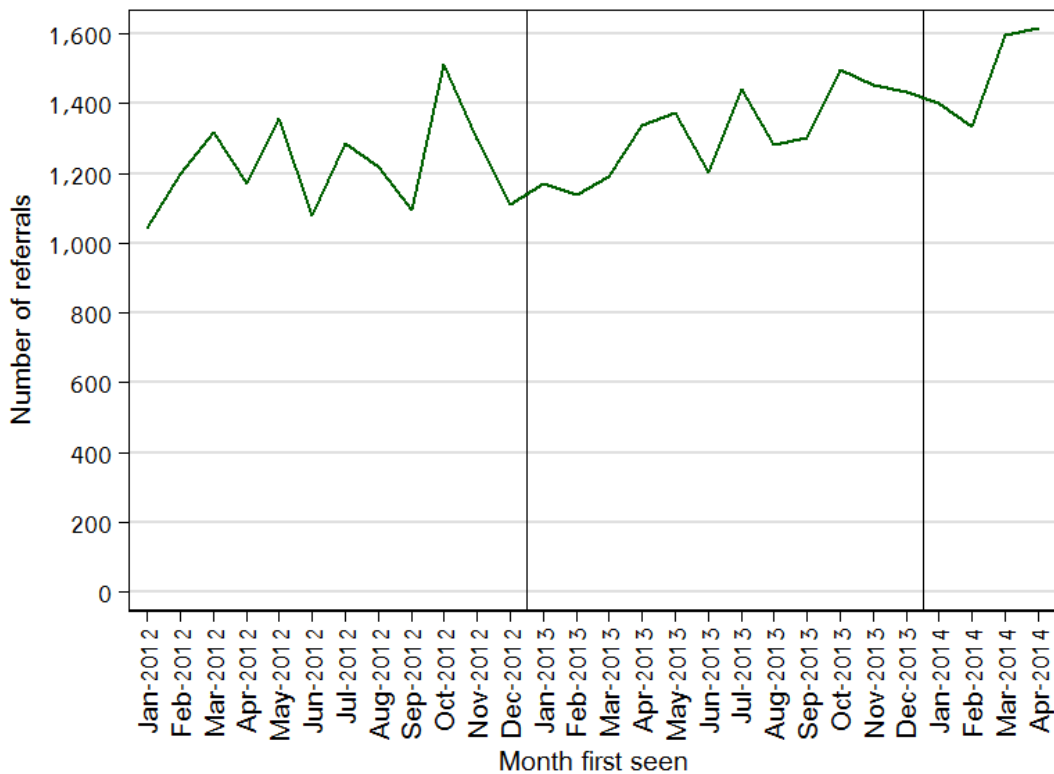


Figure R1aii: Monthly number of urgent GP referrals for suspected gynaecological cancers from January 2012-April 2014, control area

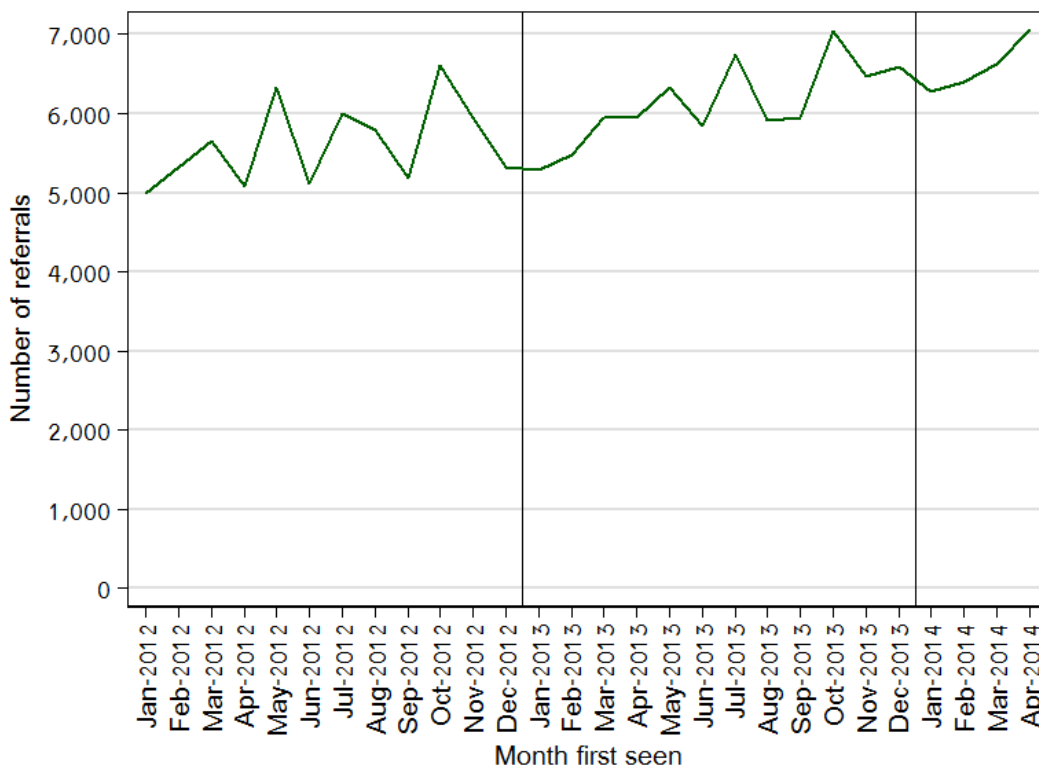


Figure R1bi: Monthly number of urgent GP referrals for suspected head and neck cancers from January 2012-April 2014, regional pilot area

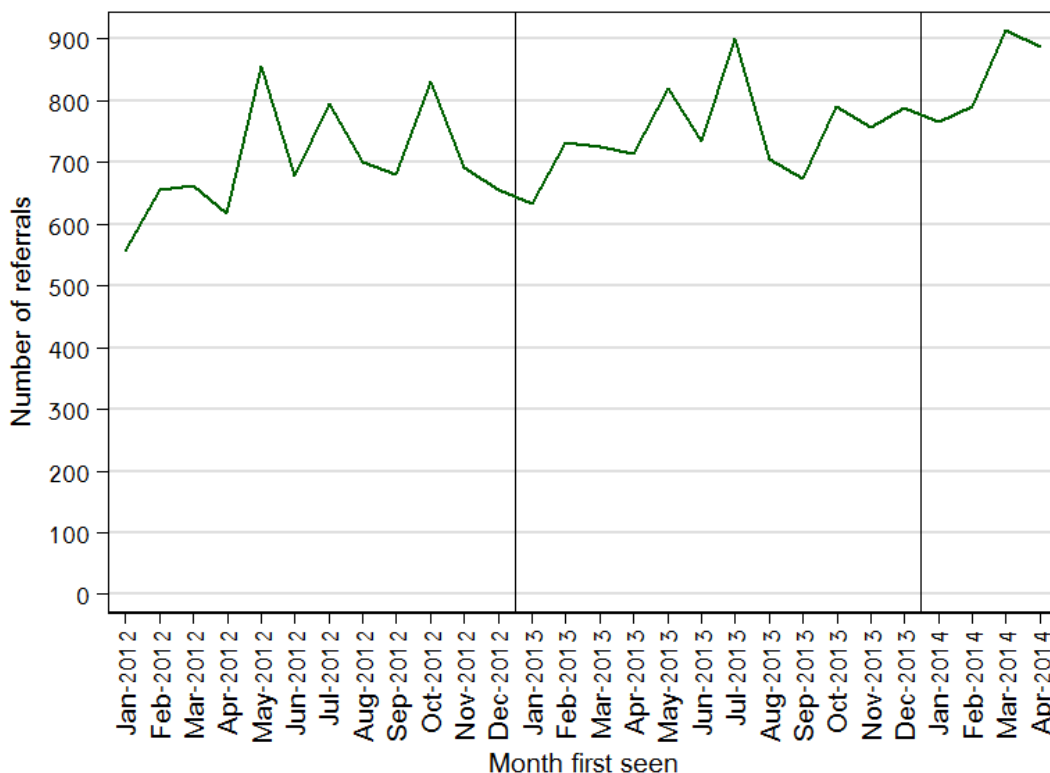
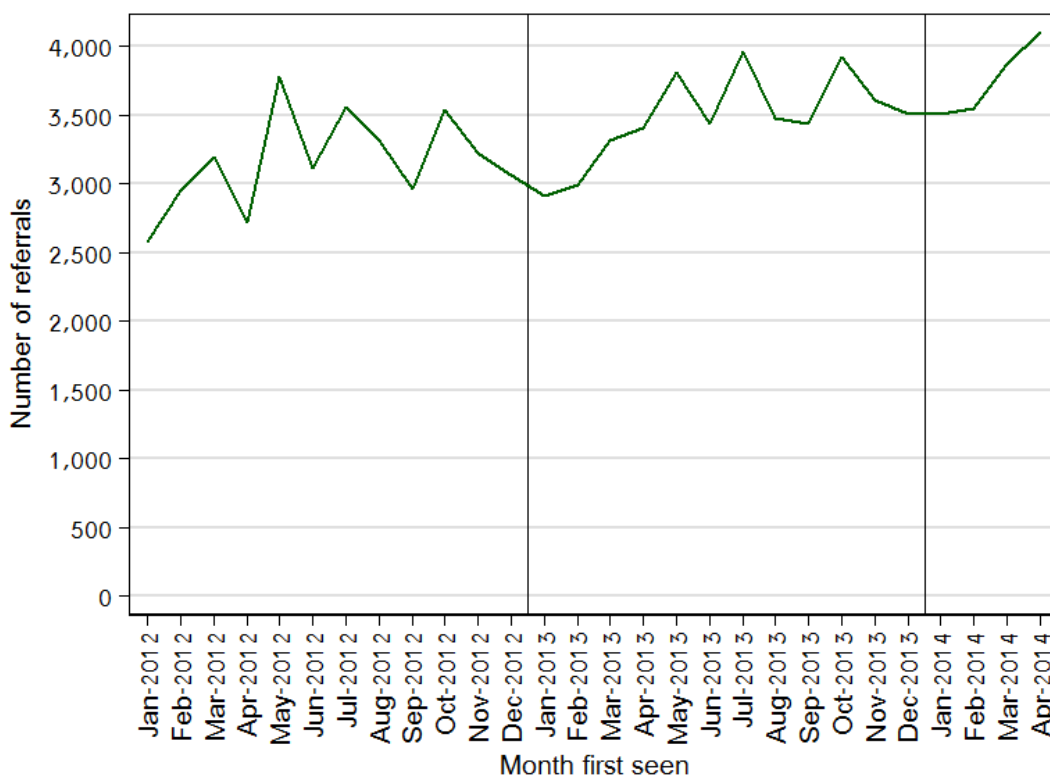


Figure R1bii: Monthly number of urgent GP referrals for suspected head and neck cancers from January 2012-April 2014, control area



Age results

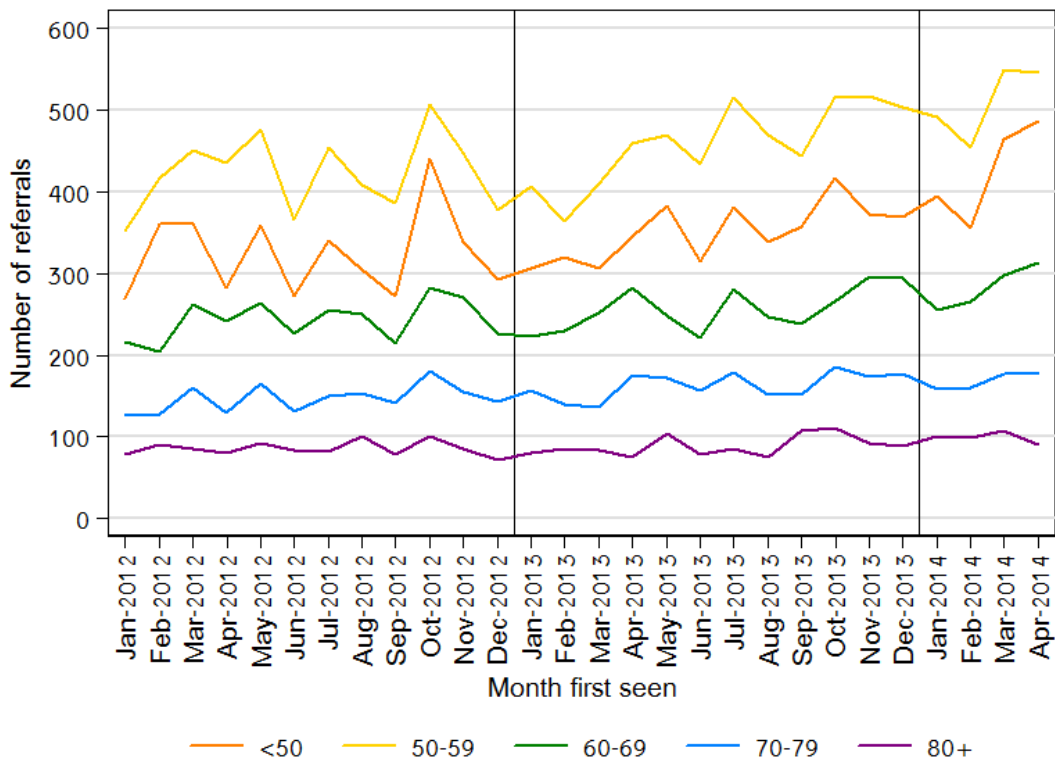
Statistically significant increases in the number of referrals for suspected gynaecological cancers were observed for all age groups in the regional pilot area between February-April 2013 and February-April 2014 (Table R2). The largest relative change was observed for the under 50 age group (35%, from 972 to 1,307 referrals) and the smallest for the 70 to 79 age group (14%, from 451 to 515 referrals).

The number of referrals for those aged 59 or younger was relatively high, in contrast to other suspected cancer referral types. The age group with the highest referral rate in both February-April 2013 and 2014 was the 50 to 59 age group; this age group had the second largest relative change, of 26%. The campaign appears to have increased referrals for suspected gynaecological cancers among those aged 59 or younger more than among those aged 60 and over.

Table R2: Number of urgent GP referrals for suspected gynaecological cancers, with referral rate and percentage change in number of referrals, from February-April 2013 and February-April 2014, regional pilot area, by age

Age group		February-April				
		Referrals	% Change in number	P-value	Referral rate Estimate	Referral rate 95% CI
<50	2013	972	34.5	<0.001	188.9	(177.2, 201.2)
	2014	1,307			254.0	(240.4, 268.2)
50-59	2013	1,233	25.8	<0.001	1,238.0	(1,169.8, 1,309.1)
	2014	1,551			1,557.3	(1,480.7, 1,636.8)
60-69	2013	765	14.4	0.007	855.0	(795.5, 917.8)
	2014	875			977.9	(914.2, 1,044.9)
70-79	2013	451	14.2	0.039	708.6	(644.7, 777.1)
	2014	515			809.2	(740.8, 882.2)
80+	2013	245	21.2	0.025	529.0	(464.8, 599.5)
	2014	297			641.2	(570.4, 718.5)

Figure R2: Monthly number of urgent GP referrals for suspected gynaecological cancers from January 2012-April 2014, regional pilot area, by age



Cancer diagnoses resulting from an urgent GP referral for suspected cancer

Total results

The number of ovarian cancer diagnoses resulting from urgent GP referrals for suspected gynaecological cancers in February-April 2014 was similar to that in February-April 2013 in both the regional pilot area and the control area (Table TC1). This was also true for all gynaecological cancer diagnoses.

The trend charts do not show any evidence of an increased number of ovarian or gynaecological cancer diagnoses resulting from urgent GP referrals for suspected gynaecological cancers; the number of such diagnoses varied each month due to the small numbers, but there were no clear increasing or decreasing trends from January 2012 to April 2014 either in the regional pilot area or the control area (Figures TC1ai; TC1aaii; TC1bi; TC1bii).

Table TC1: Number of ovarian and gynaecological cancer diagnoses resulting from urgent GP referrals for suspected gynaecological cancers, with percentage change in number of cancers, from February-April 2013 and February-April 2014

Cancer type	Overall	February-April			
		TWW cancers		% Change in number	P-value
		2013	2014		
Ovarian cancer	Regional pilot area	57	63	10.5	0.584
	Control area	269	239	-11.2	0.183
Gynaecological cancer	Regional pilot area	232	235	1.3	0.890
	Control area	985	996	1.1	0.805

Figure TC1ai: Monthly number of ovarian cancer diagnoses resulting from an urgent GP referral for suspected gynaecological cancers from January 2012-April 2014, regional pilot area

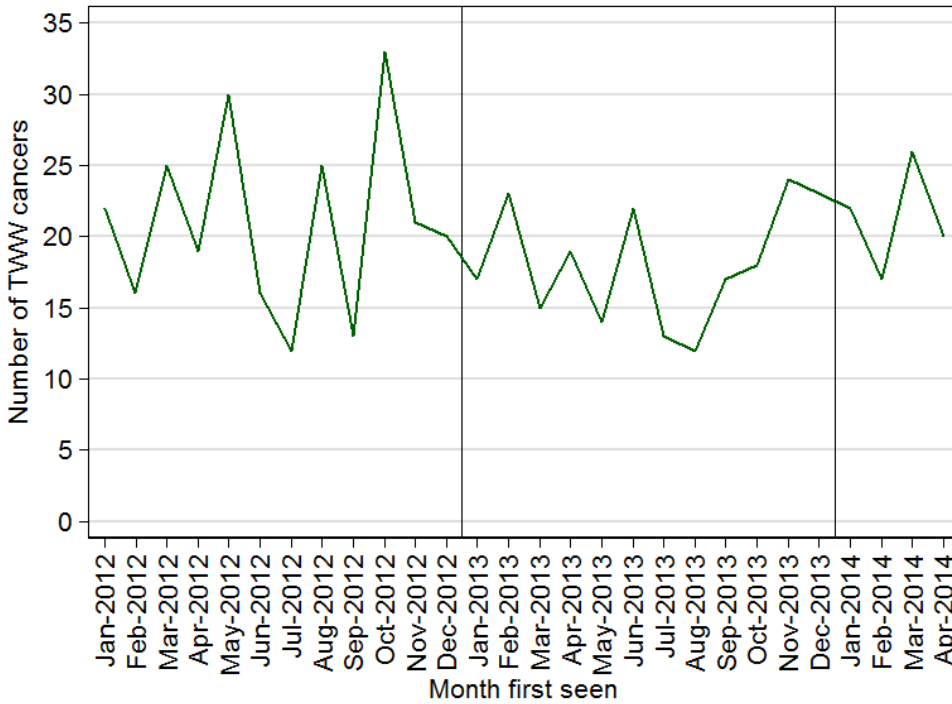


Figure TC1aii: Monthly number of ovarian cancer diagnoses resulting from an urgent GP referral for suspected gynaecological cancers from January 2012-April 2014, control area

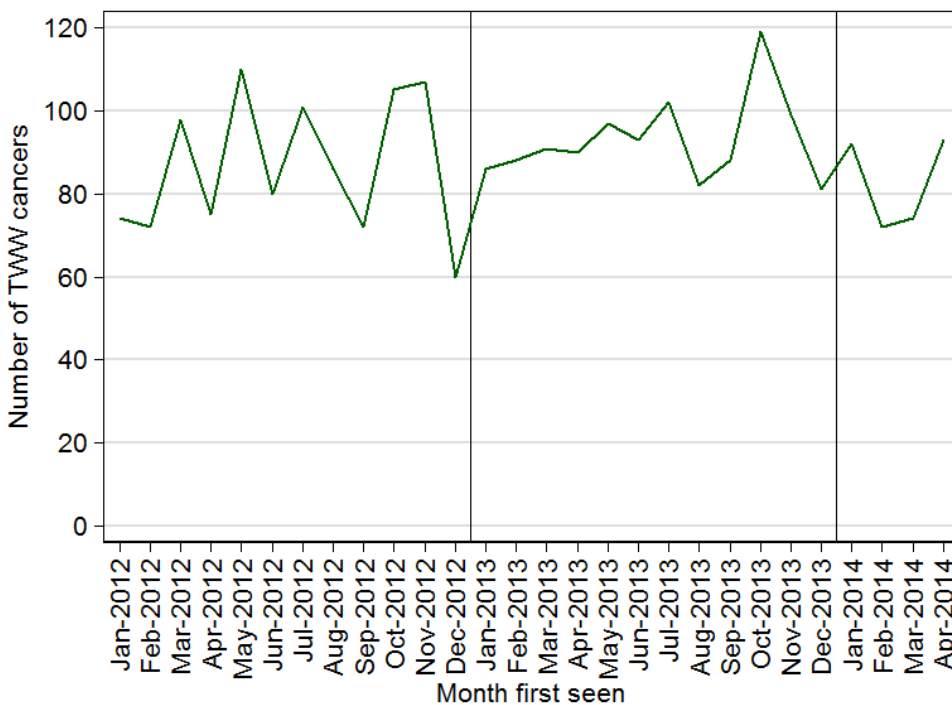


Figure TC1bi: Monthly number of gynaecological cancer diagnoses resulting from an urgent GP referral for suspected gynaecological cancers from January 2012-April 2014, regional pilot area

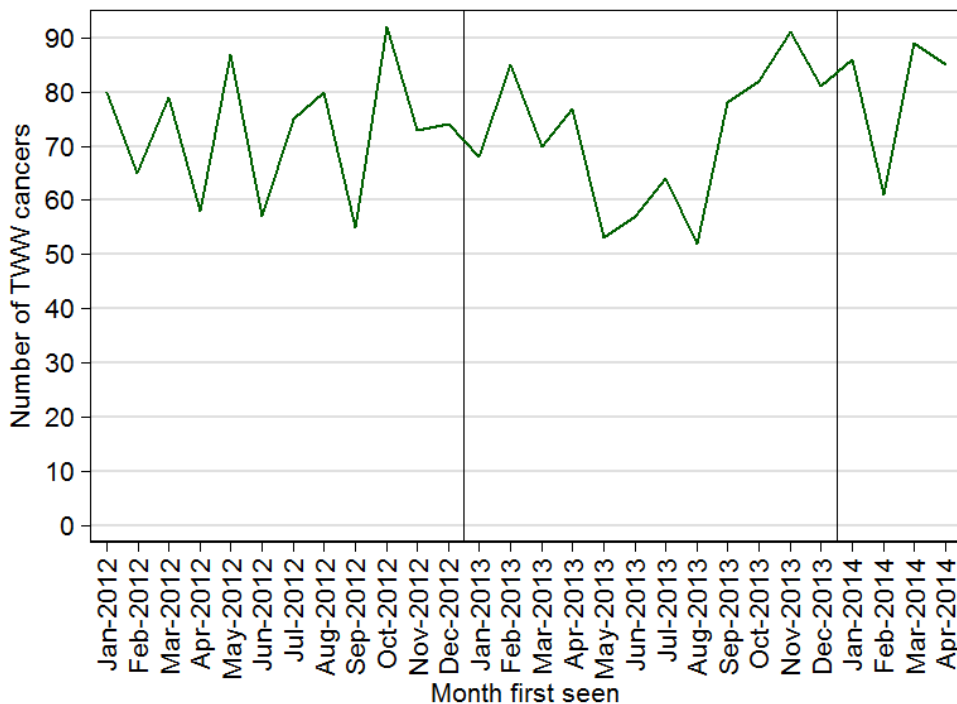
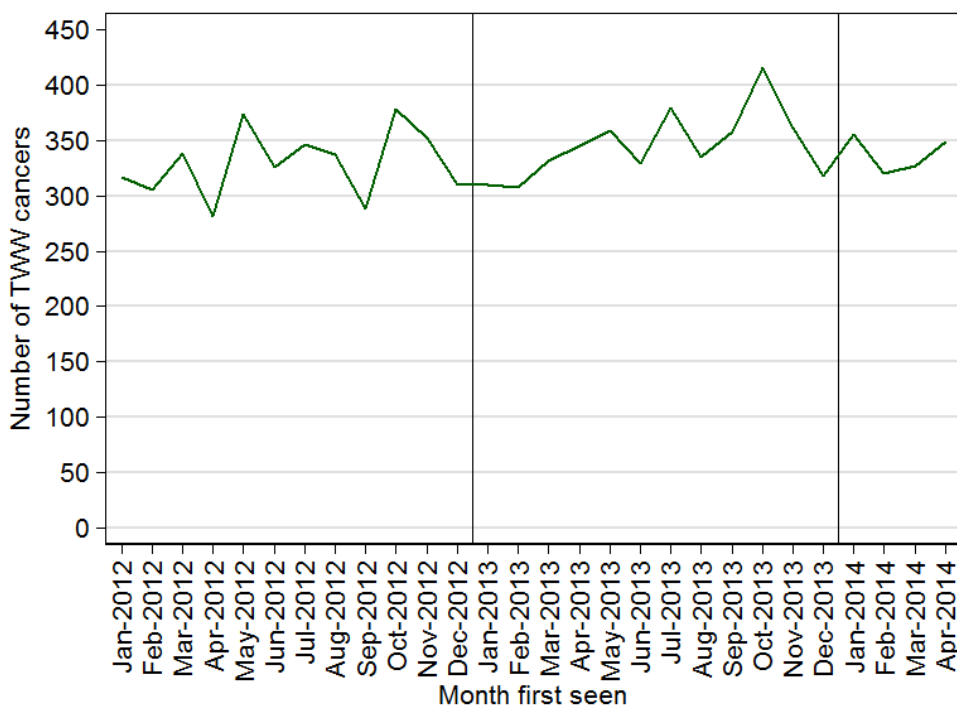


Figure TC1bii: Monthly number of gynaecological cancer diagnoses resulting from an urgent GP referral for suspected gynaecological cancers from January 2012-April 2014, control area



Age results

There were no statistically significant changes in the number of ovarian or gynaecological cancer diagnoses resulting from urgent GP referrals for suspected gynaecological cancers for any age group (Table TC2).

The age-specific trend charts show a large amount of natural variation, but do not appear to suggest a campaign effect (Figures TC2a; TC2b).

Table TC2: Number of ovarian and gynaecological cancer diagnoses resulting from urgent GP referrals for suspected gynaecological cancers, with percentage change in number of cancers, from February-April 2013 and February-April 2014, regional pilot area, by age

Cancer type	Age group	February-April			
		TWW cancers		% Change in number	P-value
		2013	2014		
Ovarian cancer	<50	10	7	-30.0	0.466
	50-59	11	12	9.1	0.835
	60-69	17	24	41.2	0.273
	70-79	12	11	-8.3	0.835
	80+	7	9	28.6	0.617
Gynaecological cancer	<50	26	22	-15.4	0.563
	50-59	43	43	0.0	1.000
	60-69	78	81	3.8	0.812
	70-79	56	53	-5.4	0.774
	80+	29	36	24.1	0.385

Figure TC2a: Quarterly number of ovarian cancer diagnoses resulting from an urgent GP referral for suspected gynaecological cancers from February-April 2012 to February-April 2014, regional pilot area, by age

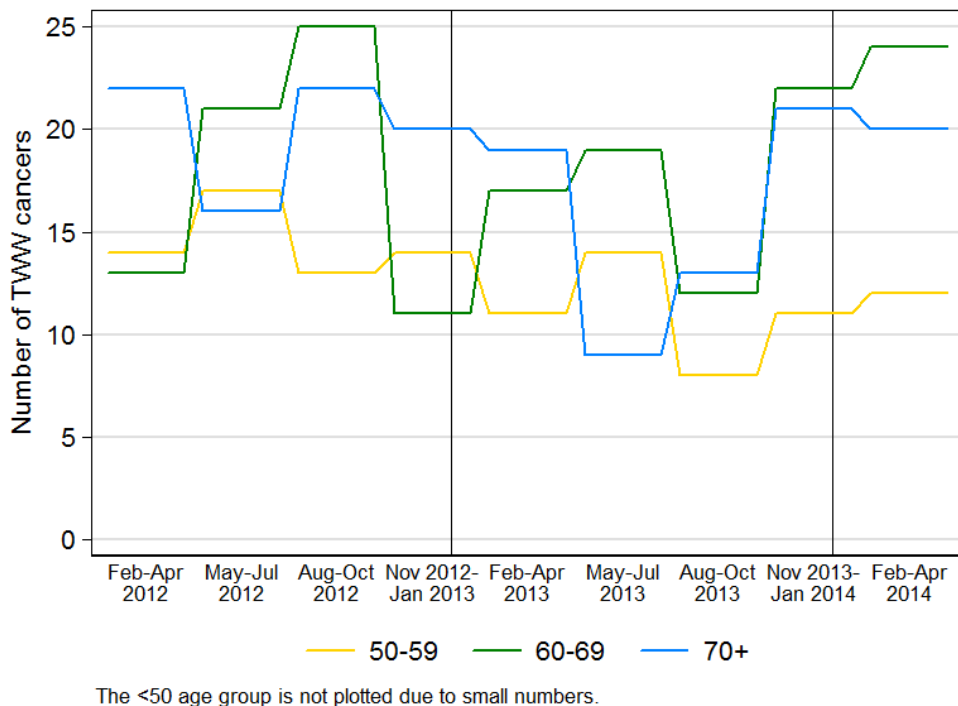
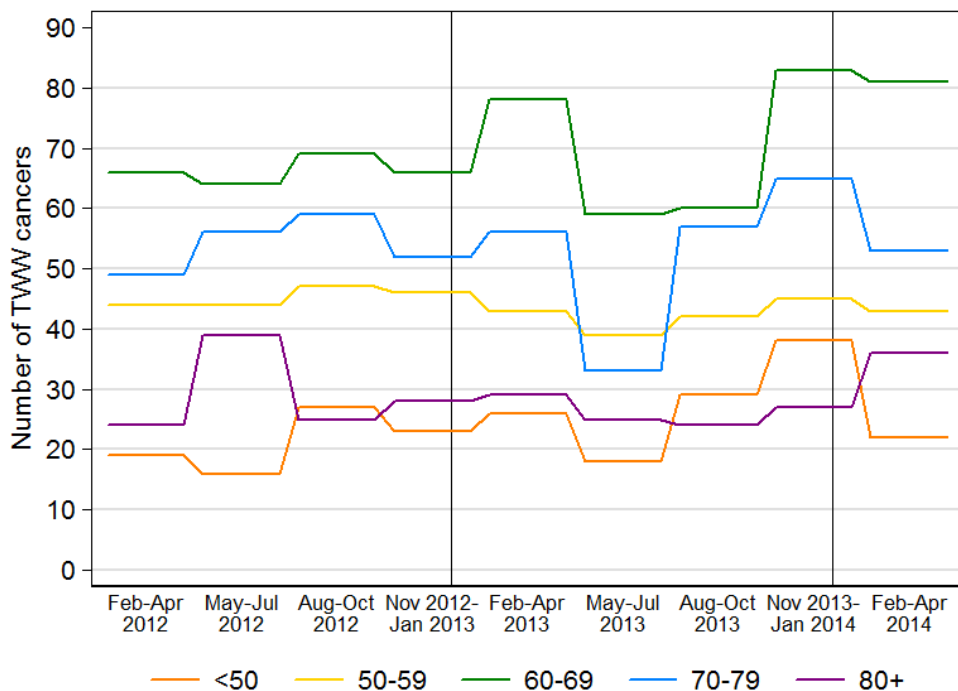


Figure TC2b: Quarterly number of gynaecological cancer diagnoses resulting from an urgent GP referral for suspected gynaecological cancers from February-April 2012 to February-April 2014, regional pilot area, by age



Conversion rate

Total results

The conversion rate for urgent GP referrals for suspected gynaecological cancers is low, with around 6% of referrals leading to a gynaecological cancer diagnosis and around 1.5% of referrals leading to an ovarian cancer diagnosis (Table C1).

In the regional pilot area, there was a statistically significant change in the gynaecological cancer conversion rate when comparing February-April 2013 to February-April 2014, with the gynaecological cancer conversion rate decreasing by 1.2 percentage points from 6.3% to 5.2%. The ovarian cancer conversion rate also appeared to decrease slightly, but this change was not statistically significant. This seemed consistent with the long term trend (Figures C1a; C1b), and similar decreases were observed in the control area.

Table C1: Ovarian and gynaecological cancer conversion rates for urgent GP referrals for suspected gynaecological cancers, with change, from February-April 2013 and February-April 2014

Cancer type	Overall	February-April					
		2013		2014		% -point change	P-value
		Conv. rate (%)	95% CI	Conv. rate (%)	95% CI		
Ovarian cancer	Regional pilot area	1.6	(1.2, 2.0)	1.4	(1.1, 1.8)	-0.2	0.527
	Control area	1.5	(1.4, 1.7)	1.2	(1.0, 1.3)	-0.4	0.003
Gynaecological cancer	Regional pilot area	6.3	(5.6, 7.2)	5.2	(4.6, 5.9)	-1.2	0.024
	Control area	5.7	(5.3, 6.0)	5.0	(4.7, 5.3)	-0.7	0.002

Figure C1a: Monthly ovarian cancer conversion rates for urgent GP referrals for suspected gynaecological cancers from January 2012-April 2014

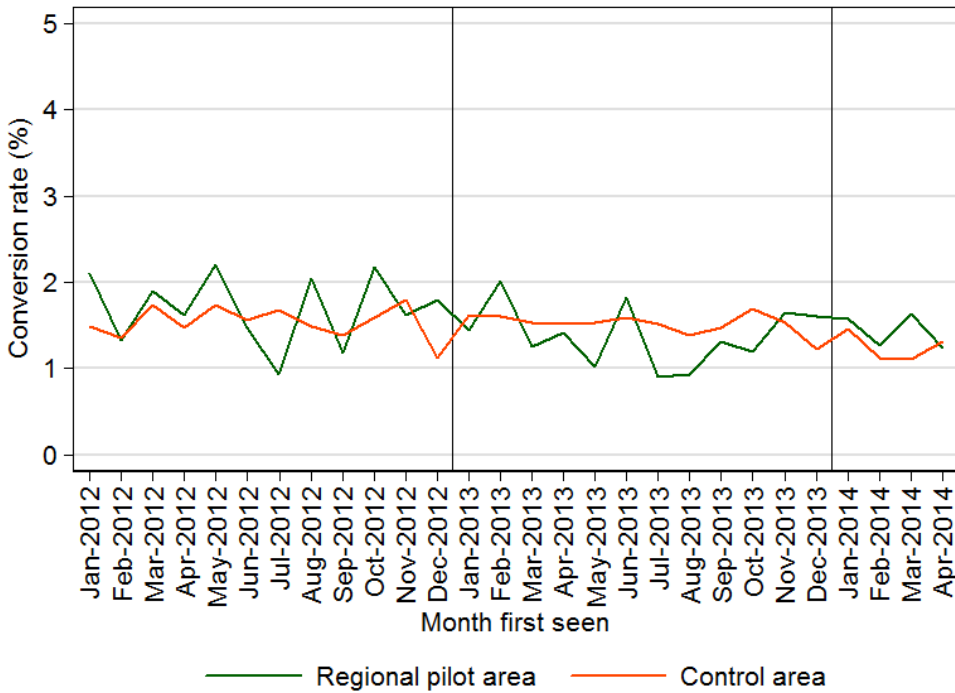
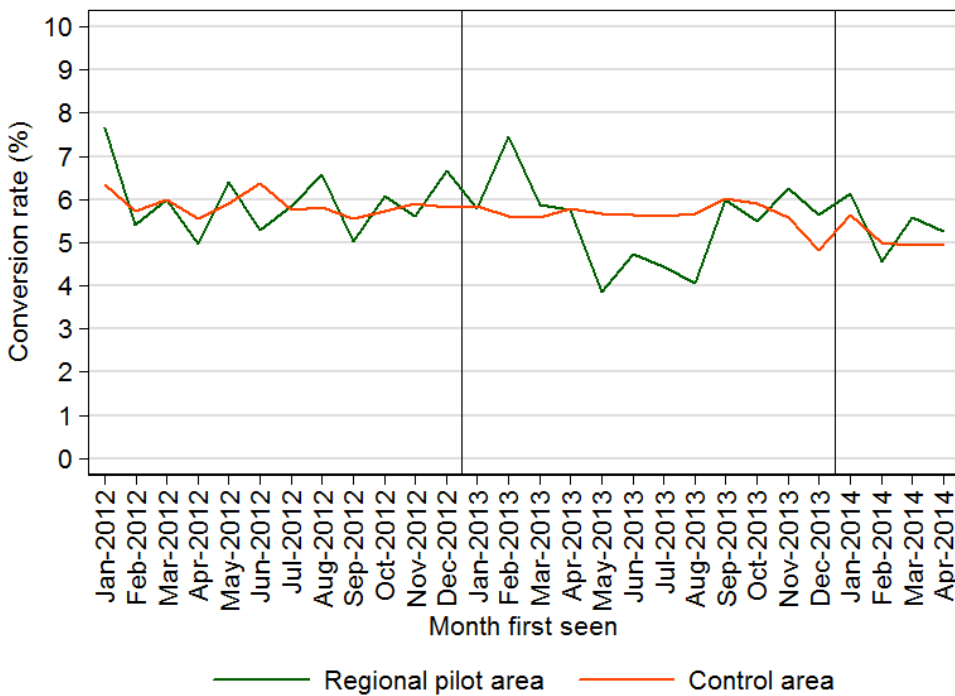


Figure C1b: Monthly gynaecological cancer conversion rates for urgent GP referrals for suspected gynaecological cancers from January 2012-April 2014



Age results

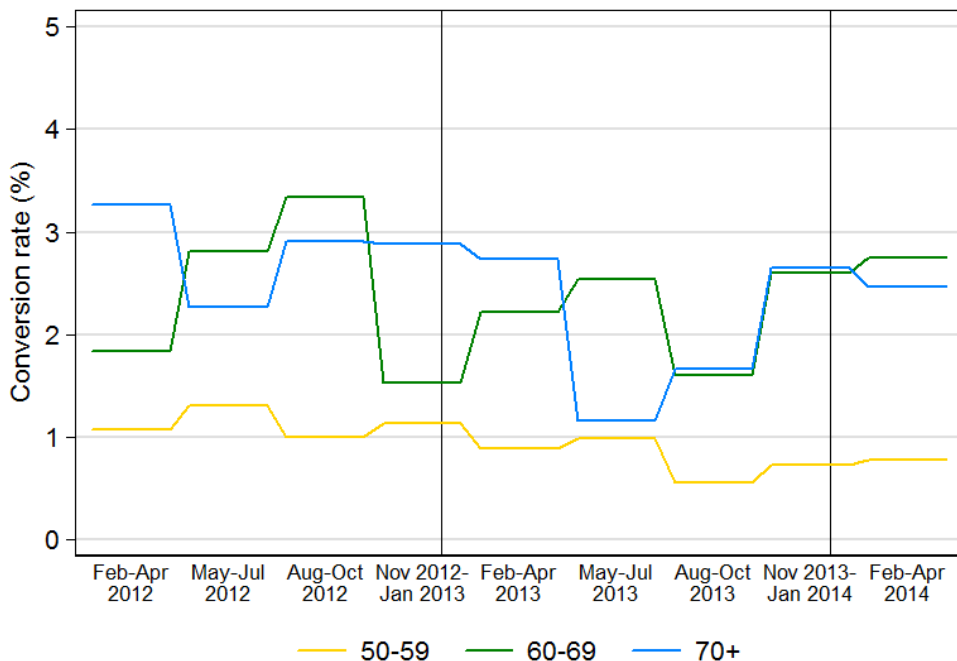
There were no statistically significant changes in the conversion rate to ovarian cancer diagnoses or gynaecological cancer diagnoses for urgent GP referrals for suspected gynaecological cancers when comparing February-April 2013 with February-April 2014 for any age group (Table C2).

The age-specific trend charts show a very large amount of natural variation, but do not appear to suggest a campaign effect (Figures C2a; C2b).

Table C2: Ovarian and gynaecological cancer conversion rates for urgent GP referrals for suspected gynaecological cancers, with change, from February-April 2013 and February-April 2014, regional pilot area, by age

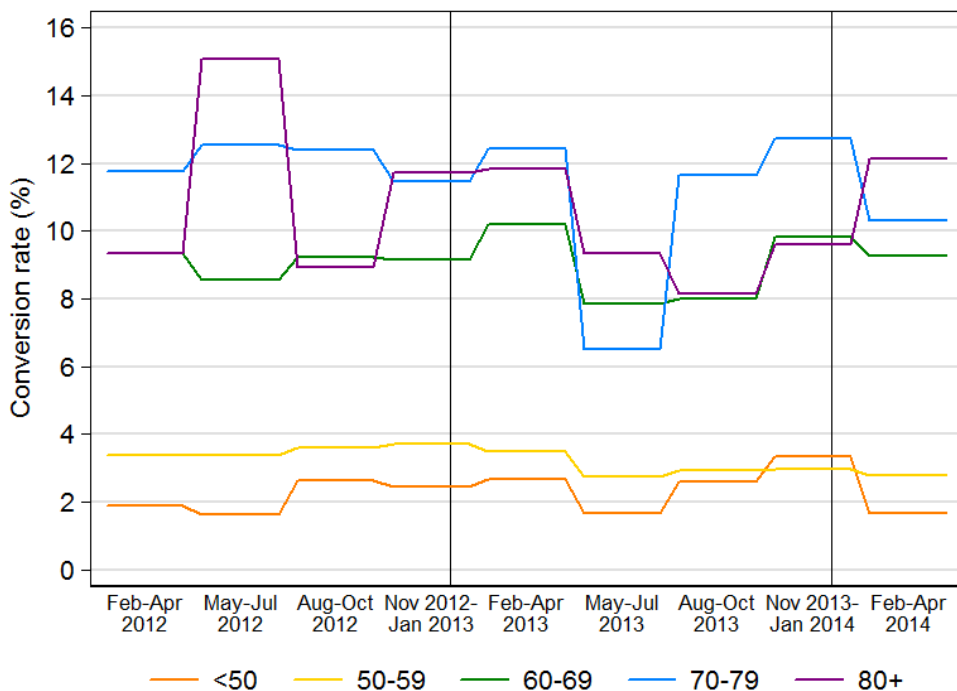
Cancer type	Age group	February-April					
		2013		2014		% -point change	P-value
		Conv. rate (%)	95% CI	Conv. rate (%)	95% CI		
Ovarian cancer	<50	1.0	(0.6, 1.9)	0.5	(0.3, 1.1)	-0.5	0.176
	50-59	0.9	(0.5, 1.6)	0.8	(0.4, 1.3)	-0.1	0.732
	60-69	2.2	(1.4, 3.5)	2.7	(1.9, 4.0)	0.5	0.500
	70-79	2.7	(1.5, 4.6)	2.1	(1.2, 3.8)	-0.5	0.593
	80+	2.9	(1.4, 5.8)	3.0	(1.6, 5.7)	0.2	0.906
Gynaecological cancer	<50	2.7	(1.8, 3.9)	1.7	(1.1, 2.5)	-1.0	0.103
	50-59	3.5	(2.6, 4.7)	2.8	(2.1, 3.7)	-0.7	0.279
	60-69	10.2	(8.2, 12.5)	9.3	(7.5, 11.4)	-0.9	0.521
	70-79	12.4	(9.7, 15.8)	10.3	(8.0, 13.2)	-2.1	0.298
	80+	11.8	(8.4, 16.5)	12.1	(8.9, 16.3)	0.3	0.919

Figure C2a: Quarterly ovarian cancer conversion rates for urgent GP referrals for suspected gynaecological cancers from February-April 2012 to February-April 2014, regional pilot area, by age



The <50 age group is not plotted due to small numbers.

Figure C2b: Quarterly gynaecological cancer conversion rates for urgent GP referrals for suspected gynaecological cancers from February-April 2012 to February-April 2014, regional pilot area, by age



Cancer diagnoses recorded in the Cancer Waiting Times database

Total results

The number of ovarian cancers diagnosed in March-May 2014 was similar to that in March-May 2013 in both the regional pilot area and the control area (Table CC1). This also held for all gynaecological cancers.

The trend charts do not show any evidence of an increased number of ovarian or gynaecological cancer diagnoses; the number of new diagnoses each month was stable from January 2012 to May 2014 both in the regional pilot area and the control area (Figures CC1ai; CC1aii; CC1bi; CC1bii).

Table CC1: Number of ovarian and gynaecological cancer diagnoses recorded in the Cancer Waiting Times database, with percentage change in number of cancers, from March-May 2013 and March-May 2014

Cancer type	Overall	March-May			
		CWT cancers		% Change in number	P-value
		2013	2014		
Ovarian cancer	Regional pilot area	139	148	6.5	0.595
	Control area	621	582	-6.3	0.261
Gynaecological cancer	Regional pilot area	470	510	8.5	0.201
	Control area	2,009	2,025	0.8	0.801

Figure CC1ai: Monthly number of ovarian cancer diagnoses recorded in the Cancer Waiting Times database, from January 2012-May 2014, regional pilot area

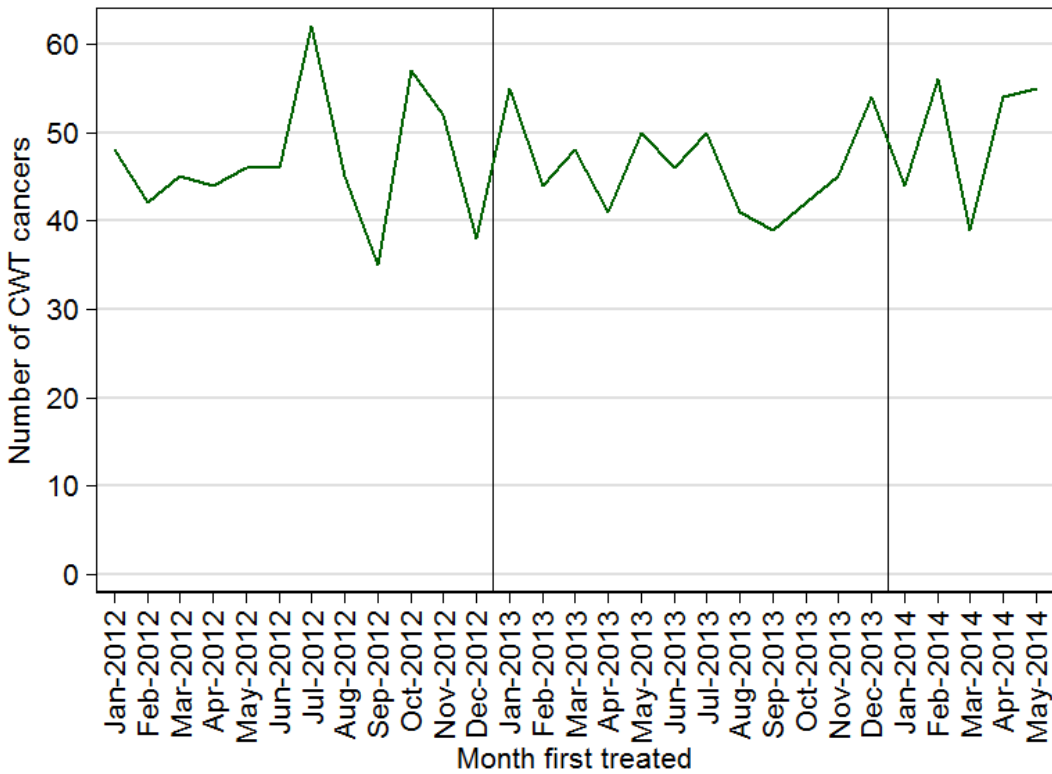


Figure CC1aii: Monthly number of ovarian cancer diagnoses recorded in the Cancer Waiting Times database, from January 2012-May 2014, control area

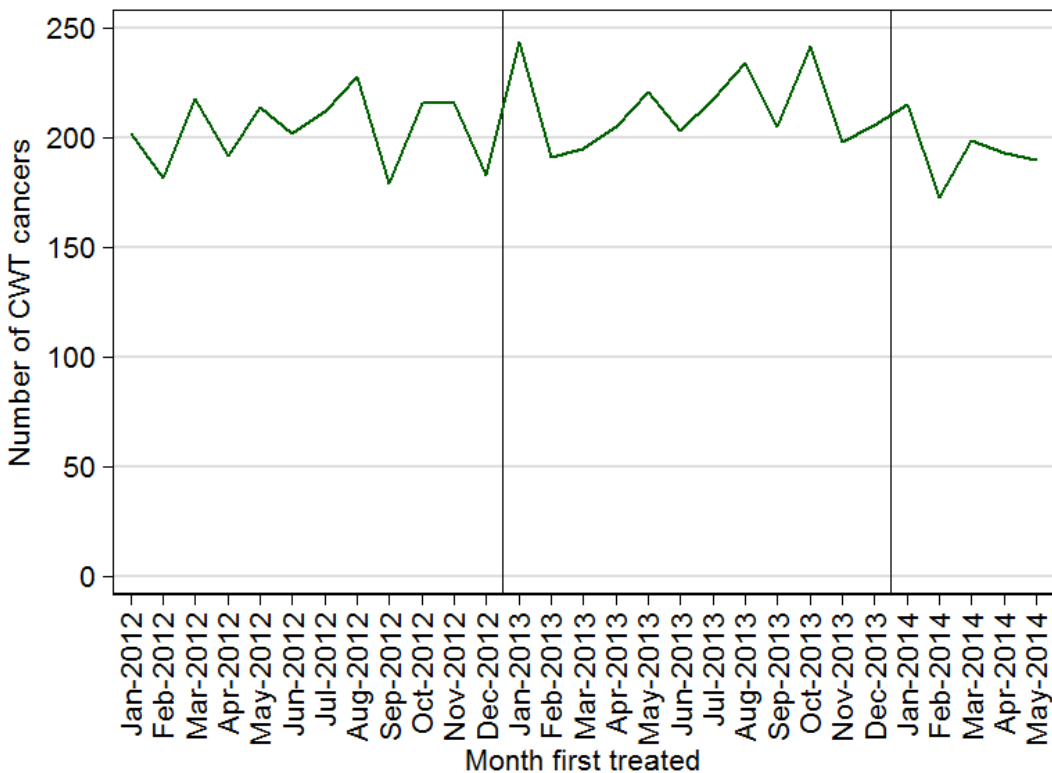


Figure CC1bi: Monthly number of gynaecological cancer diagnoses recorded in the Cancer Waiting Times database, from January 2012-May 2014, regional pilot area

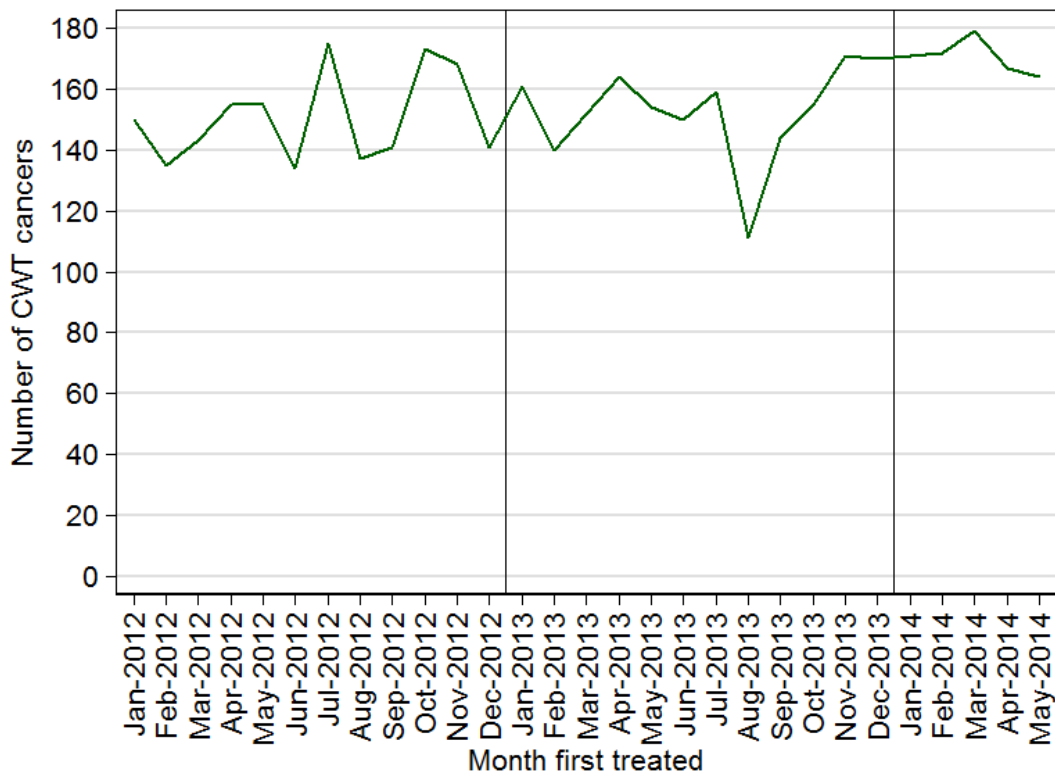
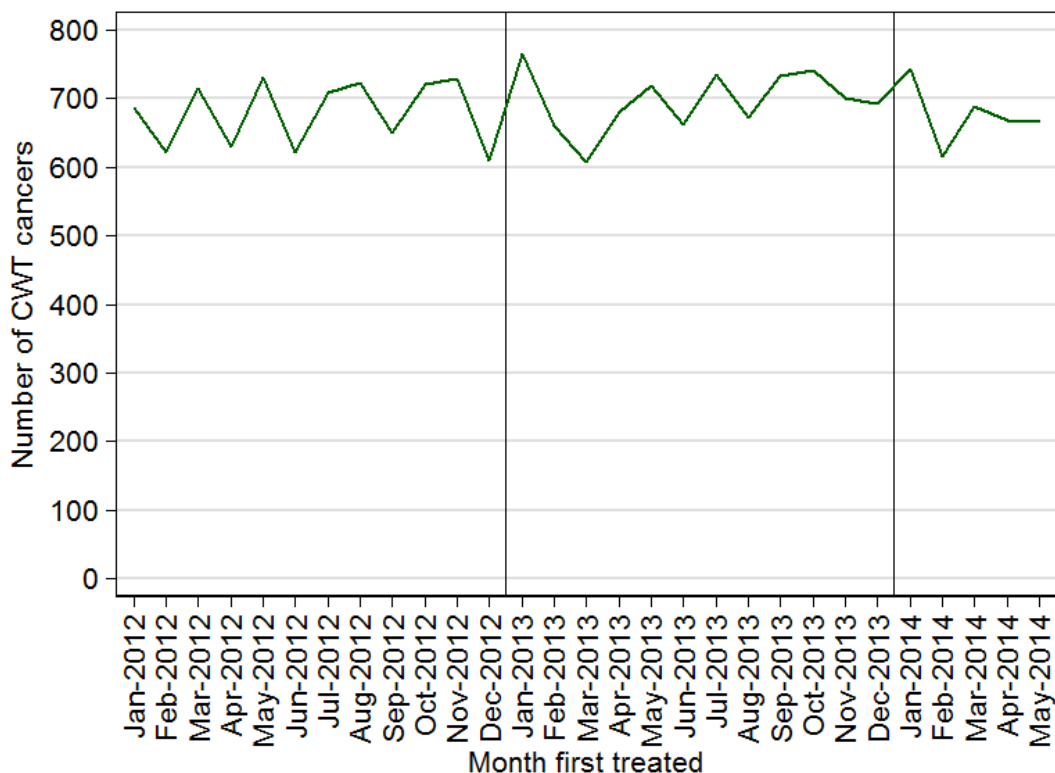


Figure CC1bii: Monthly number of gynaecological cancer diagnoses recorded in the Cancer Waiting Times database, from January 2012-May 2014, control area



Age results

There were no statistically significant changes in the number of ovarian cancers diagnosed for any age group. Small increases in the number of gynaecological cancers diagnosed in the regional pilot area were observed for all age groups, but none of these increases were statistically significant (Table CC2).

The age-specific trend charts show a large amount of natural variation, but do not appear to suggest a positive campaign effect (Figures CC2a; CC2b).

Table CC2: Number of ovarian and gynaecological cancer diagnoses recorded in the Cancer Waiting Times database, with percentage change in number of cancers, from March-May 2013 and March-May 2014, regional pilot area, by age

Cancer type	Age group	March-May			
		CWT cancers		% Change in number	P-value
		2013	2014		
Ovarian cancer	<50	26	26	0.0	1.000
	50-59	30	30	0.0	1.000
	60-69	36	41	13.9	0.569
	70-79	31	34	9.7	0.710
	80+	16	17	6.3	0.862
Gynaecological cancer	<50	102	120	17.6	0.227
	50-59	93	95	2.2	0.884
	60-69	126	128	1.6	0.900
	70-79	101	110	8.9	0.535
	80+	48	57	18.8	0.379

Figure CC2a: Quarterly number of ovarian cancer diagnoses recorded in the Cancer Waiting Times database, from March-May 2012 to March-May 2014, regional pilot area, by age

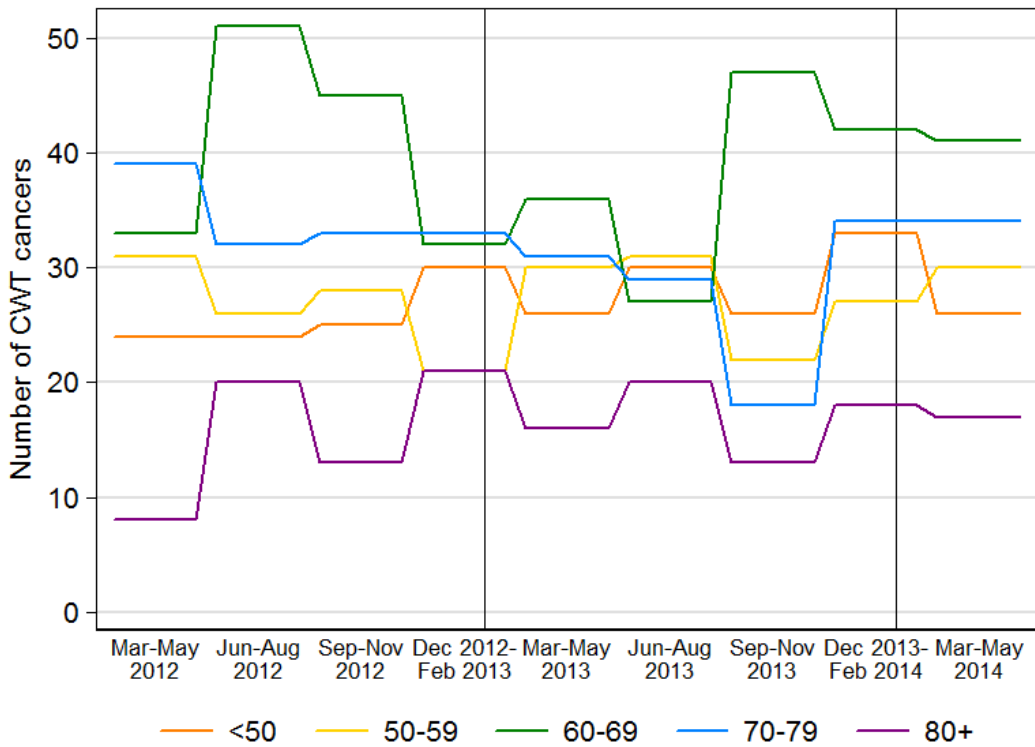
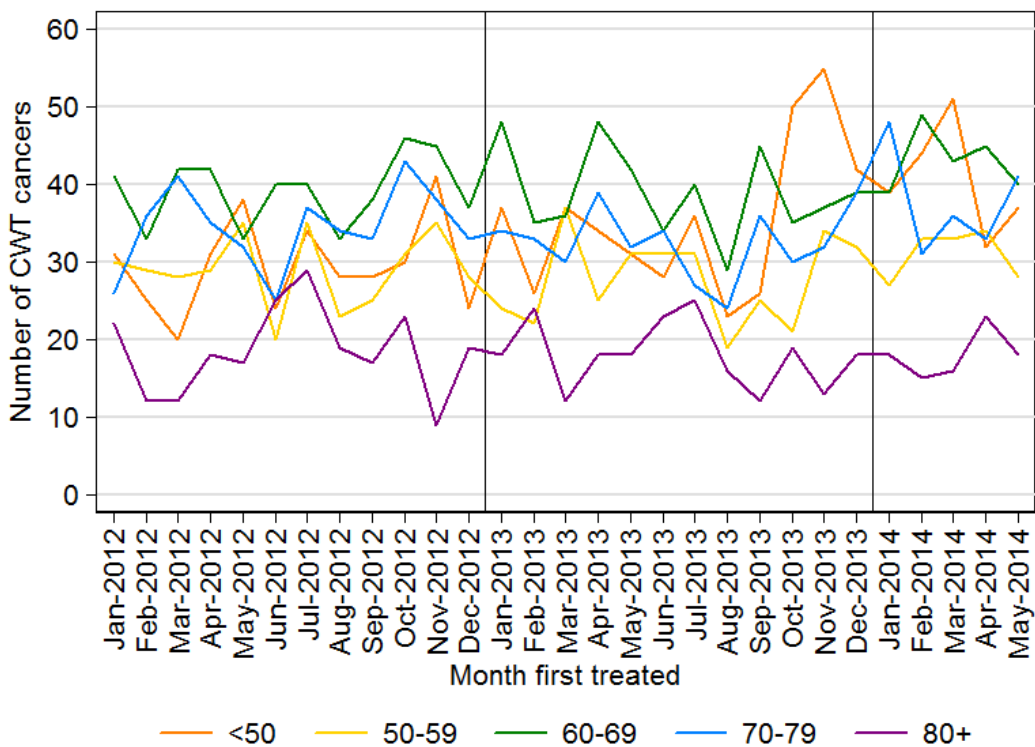


Figure CC2b: Monthly number of gynaecological cancer diagnoses recorded in the Cancer Waiting Times database, from January 2012-May 2014, regional pilot area, by age



Detection rate

Total results

There were no statistically significant changes in the detection rate for ovarian cancer diagnoses or gynaecological cancer diagnoses between March-May 2013 and March-May 2014 (Table D1).

The trend charts show that the detection rates for ovarian and gynaecological cancer diagnoses were stable from January 2012 to May 2014 (Figures D1a; D1b).

Table D1: Detection rate for ovarian and gynaecological cancer diagnoses, with change, from March-May 2013 and March-May 2014

Cancer type	Overall	March-May					
		2013		2014		% -point change	P-value
		Det. rate (%)	95% CI	Det. rate (%)	95% CI		
Ovarian cancer	Regional pilot area	43.9	(35.9, 52.2)	42.6	(34.9, 50.6)	-1.3	0.822
	Control area	45.4	(41.5, 49.3)	48.5	(44.4, 52.5)	3.0	0.291
Gynaecological cancer	Regional pilot area	51.7	(47.2, 56.2)	47.1	(42.8, 51.4)	-4.6	0.146
	Control area	51.5	(49.3, 53.7)	53.6	(51.4, 55.7)	2.1	0.190

Figure D1a: Monthly detection rate for ovarian cancer diagnoses, from January 2012-May 2014

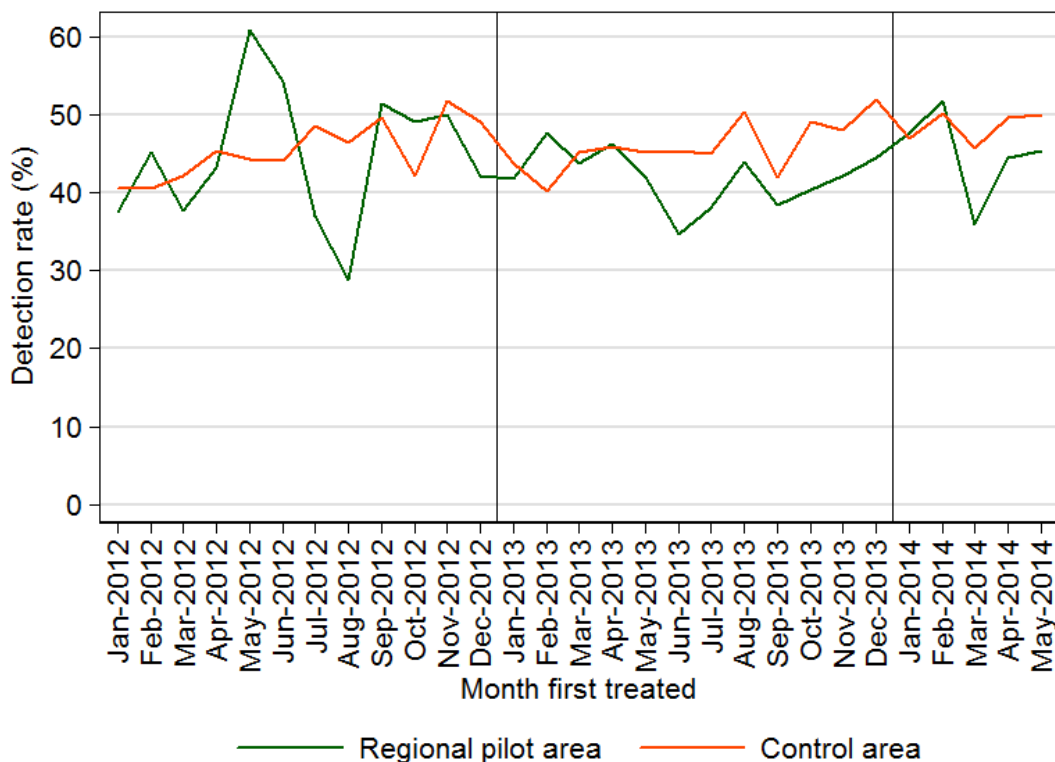
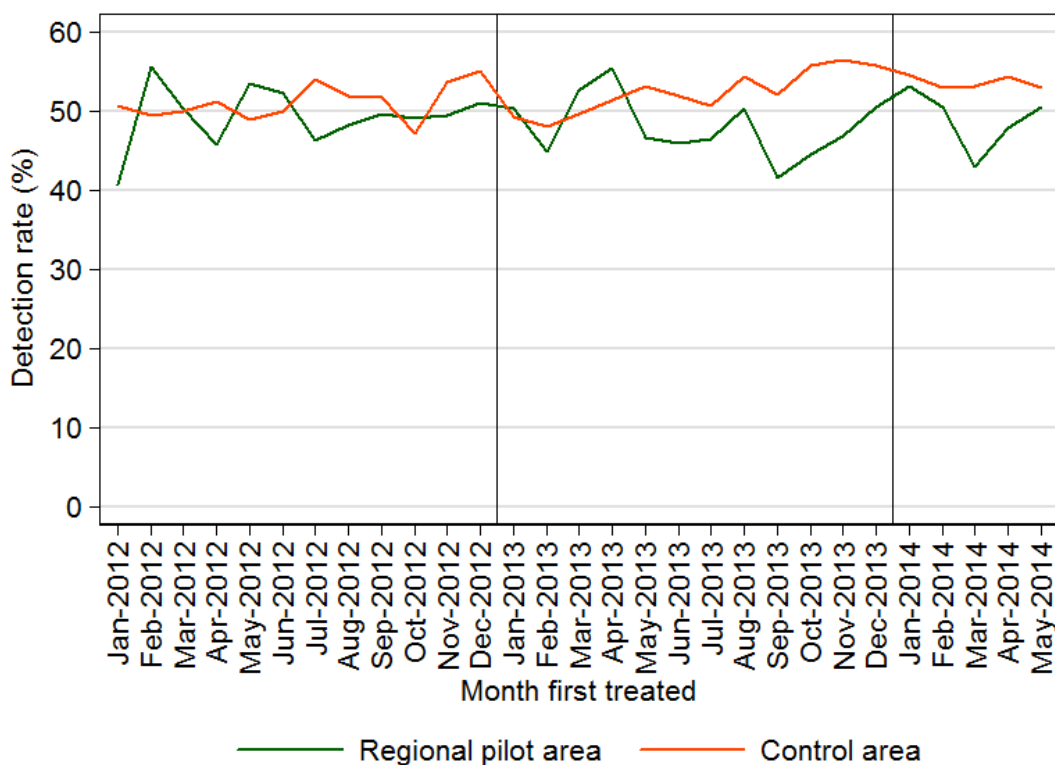


Figure D1b: Monthly detection rate for gynaecological cancer diagnoses, from January 2012-May 2014



Age results

There were no statistically significant changes in the detection rate for ovarian cancers for any age group (Table D2). Small decreases in the detection rate for gynaecological cancers diagnosed in the regional pilot area were observed for all age groups, but none of these decreases were statistically significant.

The age-specific trend charts show a very large amount of natural variation, but do not appear to suggest a positive campaign effect (Figures D2a; D2b).

Table D2: Detection rate for ovarian and gynaecological cancer diagnoses, with change, from March-May 2013 and March-May 2014, regional pilot area, by age

Cancer type	Age group	March-May					
		2013		2014		% -point change	P-value
		Det. rate (%)	95% CI	Det. rate (%)	95% CI		
Ovarian cancer	<50	42.3	(25.5, 61.1)	26.9	(13.7, 46.1)	-15.4	0.244
	50-59	50.0	(33.2, 66.8)	46.7	(30.2, 63.9)	-3.3	0.796
	60-69	44.4	(29.5, 60.4)	56.1	(41.0, 70.1)	11.7	0.307
	70-79	32.3	(18.6, 49.9)	29.4	(16.8, 46.2)	-2.8	0.804
	80+	56.3	(33.2, 76.9)	52.9	(31.0, 73.8)	-3.3	0.849
Gynaecological cancer	<50	27.5	(19.7, 36.8)	22.5	(15.9, 30.8)	-5.0	0.394
	50-59	51.6	(41.6, 61.5)	47.4	(37.6, 57.3)	-4.2	0.561
	60-69	63.5	(54.8, 71.4)	60.2	(51.5, 68.2)	-3.3	0.584
	70-79	55.4	(45.7, 64.8)	51.8	(42.6, 60.9)	-3.6	0.598
	80+	64.6	(50.4, 76.6)	59.6	(46.7, 71.4)	-4.9	0.604

Figure D2a: Quarterly detection rate for ovarian cancer diagnoses, from March-May 2012 to March-May 2014, regional pilot area, by age

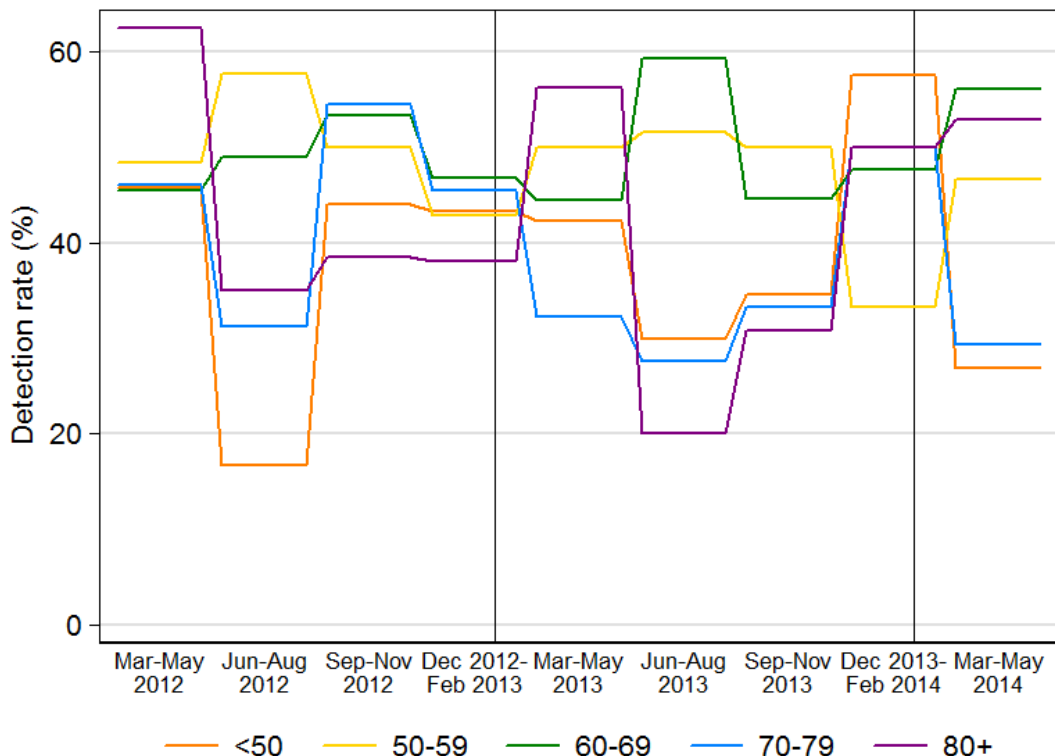
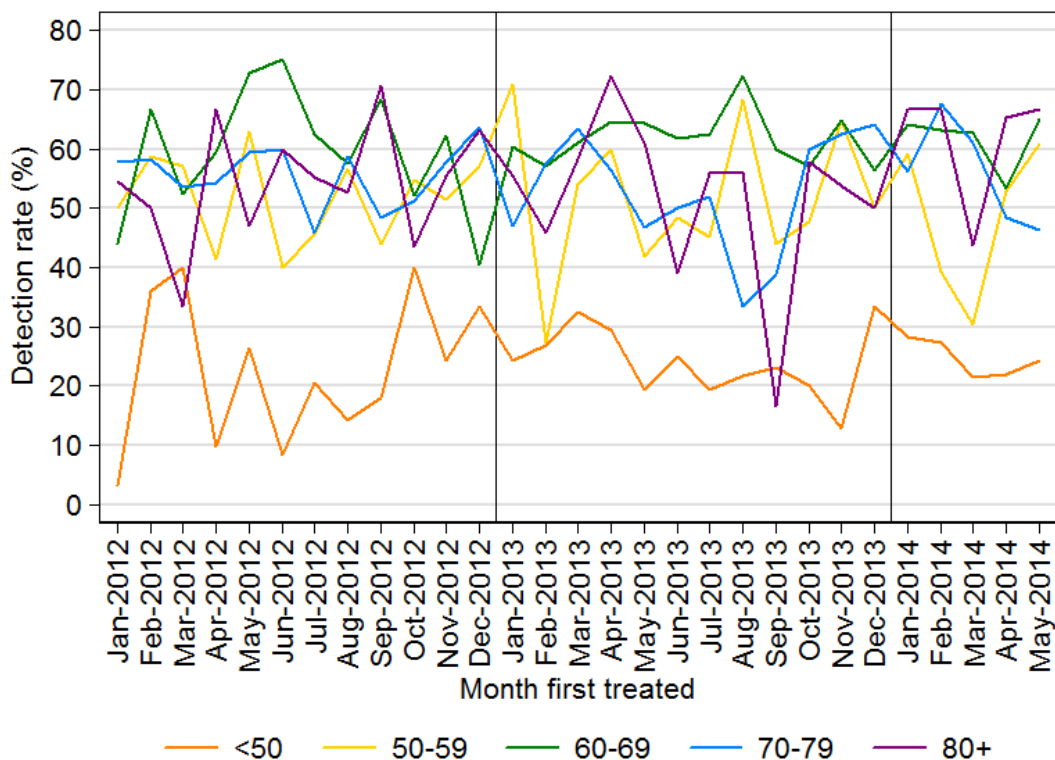


Figure D2b: Monthly detection rate for gynaecological cancer diagnoses, from January 2012-May 2014, regional pilot area, by age



Appendix 1: List of tables

Table R1a: Number of urgent GP referrals for suspected gynaecological cancers, with referral rate and percentage change in number of referrals, from February-April 2013 and February-April 2014	18
Table R1b: Number of urgent GP referrals for suspected head and neck cancers, with referral rate and percentage change in number of referrals, from February-April 2013 and February-April 2014	18
Table R2: Number of urgent GP referrals for suspected gynaecological cancers, with referral rate and percentage change in number of referrals, from February-April 2013 and February-April 2014, regional pilot area, by age	21
Table TC1: Number of ovarian and gynaecological cancer diagnoses resulting from urgent GP referrals for suspected gynaecological cancers, with percentage change in number of cancers, from February-April 2013 and February-April 2014	23
Table TC2: Number of ovarian and gynaecological cancer diagnoses resulting from urgent GP referrals for suspected gynaecological cancers, with percentage change in number of cancers, from February-April 2013 and February-April 2014, regional pilot area, by age	26
Table C1: Ovarian and gynaecological cancer conversion rates for urgent GP referrals for suspected gynaecological cancers, with change, from February-April 2013 and February-April 2014	28
Table C2: Ovarian and gynaecological cancer conversion rates for urgent GP referrals for suspected gynaecological cancers, with change, from February-April 2013 and February-April 2014, regional pilot area, by age	30
Table CC1: Number of ovarian and gynaecological cancer diagnoses recorded in the Cancer Waiting Times database, with percentage change in number of cancers, from March-May 2013 and March-May 2014	32
Table CC2: Number of ovarian and gynaecological cancer diagnoses recorded in the Cancer Waiting Times database, with percentage change in number of cancers, from March-May 2013 and March-May 2014, regional pilot area, by age	35
Table D1: Detection rate for ovarian and gynaecological cancer diagnoses, with change, from March-May 2013 and March-May 2014	37
Table D2: Detection rate for ovarian and gynaecological cancer diagnoses, with change, from March-May 2013 and March-May 2014, regional pilot area, by age	39

Appendix 2: List of figures

Figure R1ai: Monthly number of urgent GP referrals for suspected gynaecological cancers from January 2012-April 2014, regional pilot area	19
Figure R1aii: Monthly number of urgent GP referrals for suspected gynaecological cancers from January 2012-April 2014, control area	19
Figure R1bi: Monthly number of urgent GP referrals for suspected head and neck cancers from January 2012-April 2014, regional pilot area	20
Figure R1bii: Monthly number of urgent GP referrals for suspected head and neck cancers from January 2012-April 2014, control area	20
Figure R2: Monthly number of urgent GP referrals for suspected gynaecological cancers from January 2012-April 2014, regional pilot area, by age	22
Figure TC1ai: Monthly number of ovarian cancer diagnoses resulting from an urgent GP referral for suspected gynaecological cancers from January 2012-April 2014, regional pilot area	24
Figure TC1aii: Monthly number of ovarian cancer diagnoses resulting from an urgent GP referral for suspected gynaecological cancers from January 2012-April 2014, control area	24
Figure TC1bi: Monthly number of gynaecological cancer diagnoses resulting from an urgent GP referral for suspected gynaecological cancers from January 2012-April 2014, regional pilot area	25
Figure TC1bii: Monthly number of gynaecological cancer diagnoses resulting from an urgent GP referral for suspected gynaecological cancers from January 2012-April 2014, control area	25
Figure TC2a: Quarterly number of ovarian cancer diagnoses resulting from an urgent GP referral for suspected gynaecological cancers from February-April 2012 to February-April 2014, regional pilot area, by age	27
Figure TC2b: Quarterly number of gynaecological cancer diagnoses resulting from an urgent GP referral for suspected gynaecological cancers from February-April 2012 to February-April 2014, regional pilot area, by age	27
Figure C1a: Monthly ovarian cancer conversion rates for urgent GP referrals for suspected gynaecological cancers from January 2012-April 2014	29
Figure C1b: Monthly gynaecological cancer conversion rates for urgent GP referrals for suspected gynaecological cancers from January 2012-April 2014	29
Figure C2a: Quarterly ovarian cancer conversion rates for urgent GP referrals for suspected gynaecological cancers from February-April 2012 to February-April 2014, regional pilot area, by age	31

Figure C2b: Quarterly gynaecological cancer conversion rates for urgent GP referrals for suspected gynaecological cancers from February-April 2012 to February-April 2014, regional pilot area, by age	31
Figure CC1ai: Monthly number of ovarian cancer diagnoses recorded in the Cancer Waiting Times database, from January 2012-May 2014, regional pilot area	33
Figure CC1aii: Monthly number of ovarian cancer diagnoses recorded in the Cancer Waiting Times database, from January 2012-May 2014, control area	33
Figure CC1bi: Monthly number of gynaecological cancer diagnoses recorded in the Cancer Waiting Times database, from January 2012-May 2014, regional pilot area	34
Figure CC1bii: Monthly number of gynaecological cancer diagnoses recorded in the Cancer Waiting Times database, from January 2012-May 2014, control area	34
Figure CC2a: Quarterly number of ovarian cancer diagnoses recorded in the Cancer Waiting Times database, from March-May 2012 to March-May 2014, regional pilot area, by age	36
Figure CC2b: Monthly number of gynaecological cancer diagnoses recorded in the Cancer Waiting Times database, from January 2012-May 2014, regional pilot area, by age	36
Figure D1a: Monthly detection rate for ovarian cancer diagnoses, from January 2012-May 2014	38
Figure D1b: Monthly detection rate for gynaecological cancer diagnoses, from January 2012-May 2014	38
Figure D2a: Quarterly detection rate for ovarian cancer diagnoses, from March-May 2012 to March-May 2014, regional pilot area, by age	40
Figure D2b: Monthly detection rate for gynaecological cancer diagnoses, from January 2012-May 2014, regional pilot area, by age	40