



Increasing participation in bowel screening through enhanced primary care services in London and West Essex

Judith Shankleman Public Health Advisor
Maria Adeeko Cancer Strategy Implementation Support

Transforming Cancer Services Team for London

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Transforming London's health and care together

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Summary

- The Good Practice Guide for Cancer Screening¹ in London recommends interventions to increase bowel screening through primary care. Strategic Planning Groups and CCGs in London and West Essex are considering how such services can be resourced, in order to support earlier detection of cancer. To assist this, the Transforming Cancer Services Team collected information relating to services in London since 2012. Details of 19 services in 16 CCGs were accessed, including 9 service evaluations.
- Service specifications were audited using a published review of evaluations of interventions to increase cancer screening participation. The review identified 4 interventions most likely to improve participation in cancer screening, including in underserved populations². Of the interventions, 2 could be wholly or partially undertaken at practice level (pre-screening reminders and personalised reminders to non-responders). The other two need to be actioned at national programme level (GP endorsed invitations and a more acceptable test).
- Almost all services audited (18) included at least one evidence-based intervention, most commonly personalised reminders to non-responders. A number of enabling activities were also included (Table 1).
- Of 9 evaluations reviewed, 5 demonstrated an impact on participation (uptake, coverage, additional people screened) and 3 showed no change in uptake. One service was not designed to assess performance but demonstrated practice engagement and learning
- There are limitations to using uptake as an outcome measure, related to bi-annual patterns in response, differences in the number of new invitees and late responses outside the current screening episode. Recent evaluations have been able to use coverage as a measure, better reflecting the impact on population health.
- In 4 services, information was provided by the NHS Bowel Screening Service Hub to enable earlier targeted intervention. Evaluation of 2 services demonstrated effectiveness. There was no evaluation of the other 2 services. Data sharing challenges and Hub resource limitations were identified.
- In 4 services, an external organisation was commissioned to carry out specified activities. Three services showed positive impact with no change demonstrated in the fourth service.
- Financial information was provided by 4 services. Different payment mechanisms were described, with payment for activity and/or by results. There was no evidence to suggest which mechanism is most effective. Different performance indicators limited comparisons.
- Published evidence found that targeted interventions were cost-effective and may contribute to a reduction in the health inequalities accompanying the implementation of a universal screening programme.
- Recommendations for the development of an effective primary care service have been made based on this review.

Recommendations

For policy makers

1. The NHS Bowel Screening Service should ensure the continuation of GP endorsed invitations to invited people.
2. The NHS Bowel Screening Service should ensure universal introduction of Faecal Immunoglobulin testing (FIT) to replace FOBt without delay and as planned in 2018.
3. Timely bowel screening uptake and coverage data at practice level needs to be made available to commissioners, service managers and practices to enable monitoring and evaluation, including of the impact between different population groups (for example by age, gender and ethnicity).
4. Governance issues which cause data-sharing barriers need to be addressed; these can hinder joint working between the NHS Bowel Screening Service, individual practices and commissioned external organisations

For commissioners of local services

5. Primary care services to support increased participation in bowel screening should ensure the inclusion of evidence-based interventions: pre-screening reminders and/or personalised reminders to non-responders
6. Specifications should prioritise reducing inequalities in access, for example by targeting and tailoring services to those least likely to participate in screening
7. Specifications should target first time invitees/60 year olds and previous non-responders as they are least likely to participate in screening.
8. Reminders to invited people and non-responders by letter appear to be at least, if not more effective than phone calls. Sample letters and phone scripts based on evidence of barriers and motivators to screening participation, should be created, tested and specified in services. Where appropriate, these should be tailored to the needs of specific population groups.
9. A standard model for payment should be used, whether this is directly to practices and primary care collaboratives, or to third party organisations that deliver interventions.
10. Commissioners should consider how services can be made more cost-effective and quality better assured through delivery across primary care collaboratives/networks using standardised models.
11. A standardised monitoring and evaluation framework for primary care services should be developed, with input from academic and public health intelligence. Its use should be specified in all primary care services.

12. Evaluation of services which target non-responders should use changes in coverage as an outcome measure, at practice, primary care collaborative and CCG level.
13. Commissioners of bowel screening uptake projects should use Open Exeter to monitor the effectiveness of the project and ensure that they monitor key activities e.g. number and percentage of identified people called or sent endorsement letters.

For GP practices

14. Practices implementing bowel screening uptake project should use Open Exeter to identify eligible cohort (e.g. 60 year olds and previous non-responders)
15. Practices should follow general guidance and guidance specific to bowel screening in the Good Practice Guide for Bowel, Breast and Cervical Cancer Screening In Primary Care¹.
<https://www.myhealth.london.nhs.uk/system/files/Final%20Screening%20Good%20Practice%20Guide.pdf>

Background

Bowel cancer causes almost 1,400 deaths a year in London, 72% of which are in people over the age of 65. Yet many of these deaths could be avoided by prevention or earlier detection through the national bowel screening programme.

Screening reduces mortality from bowel cancer by 16% at population level, and in people who participate, by 25%³. Although uptake has increased across the capital since the programme was introduced, achieving the 60% national target is challenging. Participation rates amongst Londoners lag behind the rest of the country. The programme coverage rate in London was 49% in March 2016, compared to the England rate of 58.5%, with wide variation in London CCG rates from 40.4% to 57.4%⁴ and between practices within CCGs. There are also inequalities in uptake between population groups; people from the most economically deprived and certain ethnic groups are less likely to participate in bowel screening.

The Good Practice Guide for Cancer Screening in London¹ recommends interventions to increase bowel screening through primary care. Endorsement by people's own GP is a strong factor in participation. Enhanced or incentivised primary care services have been commissioned in several London CCGs over the past few years to realise this benefit.

In order to detect cancer earlier, Strategic Planning Groups and CCGs in London and West Essex are considering how enhanced primary care services could increase bowel screening participation, and what additional resources would be needed.

The Transforming Cancer Services Team (TCST) for London received several requests for examples of service specifications on which new services could be modelled. In response, the TCST collated relevant documentation and audited services using a review of evaluations of interventions to increase cancer screening participation. This identified four interventions that are most likely to improve participation in cancer screening, including in underserved populations².

Method

The 33 CCGs in London and West Essex were contacted to request information about any enhanced (or incentivised) primary care services to improve cancer outcomes, specifically services to support increased participation in bowel screening.

Relevant details from specifications and evaluations were extracted and mapped against interventions shown to be effective in the recent review².

Results

1. Responses

Information was provided for 21 CCGs

- In 16 CCGs there had been at least one enhanced service which included a bowel screening intervention over the previous 5 years. In some cases enhanced services are (or were) managed jointly by groups of CCGs or former PCTs.
- Details of 19 different services were reviewed.
- 4 CCGs reported that there had been no such enhanced services in their area
- 13 CCGs did not respond
- For 9 of the CCGs with an enhanced service, there was at least one service evaluation

Where there was no evaluation or only an interim evaluation, this was because:

- Current services are due to be evaluated after March 2017 (e.g. City and Hackney, Greenwich, Newham)
- Evaluation is currently being undertaken e.g. as part of the national ACE programme in (Wandsworth, Merton and Tower Hamlets)
- Some services had not yet started (e.g. Barking and Dagenham, SWL CCGs)
- No reason was provided

2. Audit of enhanced services to increase participation in bowel screening

i. Evidence

The rapid review concluded that *across different countries and health systems, a number of interventions were found more consistently to improve participation in cancer screening, including in underserved populations²*

- a. pre-screening reminders
- b. general practitioner endorsement
- c. more personalised reminders for non-participants
- d. more acceptable screening tests in bowel and cervical screening

ii. Implementation

- GP endorsement (b. above) was introduced in London as a universal measure in June 2016. This follows evidence from the ASCEND trial in England which showed that endorsement from the invitee's own GP on the invitation letter increased uptake of bowel screening⁵. In London, up to 2% increase in uptake is expected.
- A more acceptable screening test (d. above) will be introduced universally in England in the spring of 2018, when the Faecal Immunoglobulin Test (FIT) is due to replace the Faecal Occult Blood Test (FOBt). A pilot in London found more than 8% increase in uptake using the FIT, compared to FOBt, with a greater increase seen in the most economically deprived populations compared to the least deprived⁶.

The other two evidence-based interventions (a. and c. above) were included in the services reviewed

- Pre-screening reminders through letters, phone calls, texts and face-to-face meetings.
 - 11 services included this intervention for people turning 60 identified through GP registers
 - 3 of these services included all invitees 60-74 using advance lists sent to practices by the Hub.
- Personalised reminders to non-responders by letter, phone call, text, face-to-face meeting
 - 17 services included this of which:
 - 15 were to people identified through practice registers using non-response codes
 - 3 were to people who had not responded at 4 weeks using lists provided by the Hub
 - 7 used both pre-screening and non-responder reminders

The following non-targeted interventions were also included in services reviewed. While there is no evidence that these are effective alone, they may act as enablers and contribute to the targeted interventions above.

- Peer endorsement e.g. patient champions
- Opportunistic endorsement (e.g. EMIS flag)
- General awareness raising in practice populations
- Awareness raising through general group sessions
- Adoption of a Guide for Cancer Screening In Primary Care
- Practice education and training sessions
- Requesting kits on behalf of patients
- List cleaning
- Named practice lead

Services mapped against interventions with high level evaluation findings are in Table 1.

3. Financial incentives and resourcing

Where information was provided, payment mechanisms to practices included:

- Payment for commitment to participate (signed contract, attendance at launch event)
- Payment for completion of required activities (% of target group or per individual contacted)
- Payment for increases in uptake (sliding scale related to baseline, additional screens)
- Payment for enabling activities (practice lead, staff training, health promotion resources)

In 3 services an external organisation was commissioned to work with practices to carry out targeted activities (sending letters, making phone calls, running group sessions).

4. Evaluation outcomes

Main outcome measures in evaluations were

- performance measures for evidence of targeted interventions and enablers
- performance measures for screening participation at population level (uptake and coverage) and at individual level (for people targeted through the intervention)
- learning for commissioners and practices

Screening metrics

The 2 published population outcome measures for bowel screening are

- Uptake: the percentage of eligible people adequately screened within 6 months of invitation. The national target is 60%.
- Coverage: the percentage of the eligible population screened within the previous 30 months. A national target has not been set.

Limited coverage data has been available at practice level for people aged 60-69, and was not published for people aged 60 - 74 until December 2016⁴. Consequently most evaluations used changes in uptake as a key metric.

There are limitations in using uptake as a measure over time, related to

- the 2-year round length (people who participate once are very likely to do so again when they are re-invited every 2 years); and differences in the proportion of new invitees entering the programme (uptake is lower for people aged 60 than older people). Figure 1 shows how uptake increases and declines on alternate years at national and CCG level, and does not reflect concurrent increasing coverage. Figure 2 shows that trend in coverage is a more stable measure reflecting health gain in a population over time.
- interventions which contact people who have not responded to their most recent invitation have less opportunity to increase uptake rates, because in many cases contact is not made until 17 or more weeks after invitation. Responses more than 26 weeks after invitation (potentially likely if replacement kits are requested) will be reflected in coverage, but not in uptake rates.

Evaluations which used uptake as an outcome measure (5 services).

(i) East London (2012)

Pre-screening reminders to 60 - 74 year olds through letters and phone calls

- Significant increase in uptake in 18 intervention practices compared with 24 control practices. Health promotion over the phone appeared more effective than to face-to-face health promotion although both resulted in a significant increase. In all cases letters were also sent.

(ii) Tower Hamlets (2014-16)

Pre-screening reminders to 60 year olds, personalised reminders to non-responders through letters and phone calls (*interim evaluation, awaiting ACE evaluation in 2017*)

- Significant increase in uptake at practice level with increasing percentage of people sent a reminder letter.
- No impact on overall uptake of contacting 60 year olds

(iii) Merton (2015/16)

Personalised reminders to non-responders through letters and phone calls (*interim evaluation, awaiting ACE evaluation in 2017*)

- Modest increase in uptake compared to neighbouring borough of Sutton

(iv) Camden (2012 - 2014) and Islington (2012 - 2014)

Pre-screening reminders to 60 year olds and personalised reminders to non-responders (letters)

- Interim evaluation at 1 year showed increases in uptake and additional people screened
- Increases were not sustained over 2 years.
- No difference in uptake in those sent/not sent letter
- No difference in uptake for 60 year olds sent pre-screening reminder
- Coverage data was not available at the time of evaluation. Subsequent evaluation shows increases in coverage for people aged 60-69 over the period of the enhanced service, while there was a simultaneous decline in England coverage rates (Figures 3, 4).

(v) Haringey (2014/15)

Personalised reminders to non-responders

- No difference in uptake over 9 months between 19 intervention practices and all practices (37)
- No reduction in the gap between most and least deprived groups.

Evaluations which used coverage as an outcome measure (2 services)

(i) Newham (2015-2017)

Personalised reminders and requesting kits on behalf of non-responders through phone calls (*interim evaluation, awaiting full report in 2017*)

- Increase in coverage of 3% during first year with indications of increasing coverage.

(ii) Tower Hamlets (2014-16)

Pre-screening reminders to 60 year olds and personalised reminders to non-responders through letters and phone calls

- Significantly higher coverage (5%) in practices which achieved at least the CCG mean performance of 40% in sending reminder letters to non-responders.
- 8.3% increase in coverage over 2 years (4% may be attributed to age extension).

Evaluations which included costs and/or health benefits measures (5 services)

(i) East London (2012)

Pre-screening reminders to 60 – 74 year olds

- £6 per person contacted. Based on published evidence, analysis suggested that this was cost-effective and may contribute to a reduction in the health inequalities accompanying the implementation of a universal screening programme^{7 8}.

(ii) Southwark (2012/13)

Personalised reminders for people who had not responded 4 weeks after invitation

- Over 8 months an additional 82 people returned a kit as (47 for whom a new kit was requested, 35 who had not yet completed their kit). £293 per additional person screened.

(iii) Camden (2012/13) and Islington (2012/13)

Pre-screening reminders to 60 year olds, personalised reminders to non-responders

- 10% non-responders who were spoken to 4 months after invitation were subsequently screened

(iv) Tower Hamlets (2014-16)

Pre-screening reminders to 60 year olds and personalised reminders to non-responders

- 7-8 letters to non-responders resulted in 1 additional person being screened.

(v) Newham (2015-2017)

Personalised reminders and requesting kits on behalf of non-responders

- Change from the current rate to the target could result in 7 fewer deaths over 5 years

Commissioner and GP practice learning

(i) Examples of CCG learning

- Differences in lists held by the Bowel Screening Service and GPs
- Resource pressures on the Hub to provide information to practices
- Non-participation by some practices
- Potential coding errors and omissions by practices
- Advance (prior notification) lists are not routinely available

(ii) Example from practice feedback in Ealing CCG (2014/15)

Key barriers to screening uptake suggested:

- Lack of patient knowledge/education regarding benefits of screening (60%)
- Cultural reasons (47%)
- Social reasons/embarrassment (40%)
- Language barriers (37%)
- Socio-economic reasons (27%)
- Transient population (20%)

(iii) Other learning

- Inaccuracies in practice records of phone numbers
- Significant proportion of non-responders report not having received a kit, even when a replacement has been requested
- Difficulty in reaching more than 50% of people by phone
- Requesting replacement kits for patients is time consuming

Discussion

- A review of 19 enhanced primary care services in London since 2012 identified the most common interventions as pre-invitation reminders and personalised reminders to non-responders by letter, phone, text or invitation to a face- to-face discussion at the practice.
- While there is published evidence of effectiveness², not all evaluations were able to demonstrate this. Limitations include
 - (i) data quality issues, such as responses from practices and coding accuracy
 - (ii) different evaluation metrics, so that outcomes cannot be easily compared
 - (iii) using uptake as the key measure over time, and for non-responders who subsequently complete a kit outside the cut-off of 26 weeks for uptake. More recent evaluations have been able to use coverage as a key measure, and appear to demonstrate positive impact of interventions which use personalised reminders for non-responders
 - (iv) restrictions in readily available data. For example, uptake is lower in 60 year olds invited for the first time, suggesting the value of pre-screening reminders to people approaching 60. While it is relatively straightforward for practices to target rising 60s using recorded date of birth, it can be difficult to demonstrate effectiveness, as routine uptake and coverage data is not provided separately for this group.
- One evaluation (pre-screening reminders only) used control practices rather than baseline performance as a comparator, and was able to use data for 60 year olds and for all screening ages. This showed significantly higher uptake in intervention practices for both groups, and concluded that letter and phone contact was more effective than letter and face-to-face contact. Subsequent evaluations in the same populations suggest that letters to non-responders may be more effective than phone calls. Reach by phone is low (around 50%) and this may be a factor.
- In 4 services, information provided by the Bowel Screening Hub was used to contact people to provide pre-screening reminders (i.e. advance lists, 3 services) or personalised reminders to non-responders at 4 weeks, relatively early in the screening episode (1 service). Evaluation was available for 1 service which used advance lists and the service which used 4-week non-response reminders. Both showed evidence of effectiveness (increased uptake or additional people screened following reminder). Both evaluations identified logistical difficulties including data sharing and resource limitations in the Bowel Screening Hub.
- In 4 services an externally commissioned organisation worked with practices to contact invited people and/or non-responders. In 3 of these services, there were increases in uptake, coverage or additional people screened. In 1 service no benefit was shown measuring uptake over 2 years (although coverage did increase when later reviewed).
- Several specifications mentioned the omission of people from the service for whom GP endorsement may be inappropriate, and might damage clinician-patient relationships; for

example people being treated for bowel cancer, or receiving palliative care for any reason. Excluded people could be identified using Read codes or through clinical discretion. There was no clarity about what proportion of people would be excluded by these methods, nor how this might impact on outcomes.

- Payment models and evaluations did not include measures of quality; for example the timeliness and content of letters and phone calls.
- Specifications suggested although did not mandate, scripts for phone calls or sample endorsement letters (included in the Good Practice Guide¹). These appear to be based on resources used in other services, and it was not clear whether published evidence⁹ or social marketing research into barriers and motivators for bowel screening had been incorporated. Communications did not target different groups within the eligible population (e.g. by age or gender) other than suggesting the NHS Bowel Screening Programme translated resources and use of bi-lingual advocates for people who do not use English as a first language.
- All services reviewed were specific to bowel screening using FOBt. It was not evident whether similar models would be effective for a different test (Faecal Immunoglobulin Testing/FIT) or for Bowel Scope (one-off sigmoidoscopy at age 55).
- A range of enabling interventions were included in services. While there is no evidence that any of these alone had an impact on participation, several are likely to increase the value of targeted contact (e.g. named practice lead, staff training, and health promotion in the practice).
- Only 4 specifications included financial information, with budgets ranging from £24,000 to £40,000. In some cases all practices in a CCG were included in the service and in others selected practices or those that chose to opt-in were included.
- Payment mechanisms were for activity and/or by results. Payment by activity acknowledges that an enhanced service requires resources regardless of the outcome; however it is likely to be dependent on the quality of data provided at practice level.
- Payment by results increases the incentive element, particularly if using a sliding scale. However, this should take account of the limitations of using uptake as a key metric for interventions which contact non-responders, who may subsequently participate outside their current screening episode.
- Cost-effectiveness analysis in one published study suggested that there was a cost-benefit of spending £6 per person targeted in populations with high levels of deprivation and ethnic diversity⁸.

Table 1. Summary of interventions and evaluations of enhanced services												
	Evidence-based interventions				Enablers							Evaluation
	Pre-screening reminders		Personalised reminders non-responders		Requesting replacement kits	Group sessions	General health promotion	Practice lead	Opportunistic endorsement	Peer endorsement	List cleaning	
CCG	60-74	60	Letter	Phone/text								
Barking & Dagenham 2016/17*		y	y	y								LIS not started
City & Hackney 2015-17*		y	y	y		y	y		y	y		-
Newham 2015-17			y	y	y							Coverage↑
Tower Hamlets 2014-16*		y	y	y					y			Uptake ↑ Coverage↑
C&H, N and TH 2012*	y	y			y							Uptake ↑
Waltham Forest*		y	y	y			y		y			-
Camden 2012-14*		y	y	y	y			y			y	Uptake → Coverage↑
Camden 2014/15*	y	y	y	y	y	y	y					-
Haringey 2014/15		y	y									Uptake →
Islington 2012-14*		y	y	y			y	y				Uptake → Coverage↑
Islington 2014/15*	y	y	y									-
Ealing 2014-17*			y	y							y	Learning outcomes
Hammersmith & Fulham 2016/17			y	y	y		y					-
Merton 2015/16		(y)	y	y			y	y			y	Uptake ↑ ACE evaluation due
Richmond 2016/17							y		y			-
Sutton 2016/17			y	y				y	y			-
Wandsworth 2015/16			y	y								ACE evaluation due
Greenwich 2016/17*			y	y				y				-
Southwark 2012/13			y									82 more screens

*Detailed service specification held by TCST

Figure 1. Trend in bowel screening **uptake** (examples are of the highest and lowest achieving London CCGs in 2015/16)

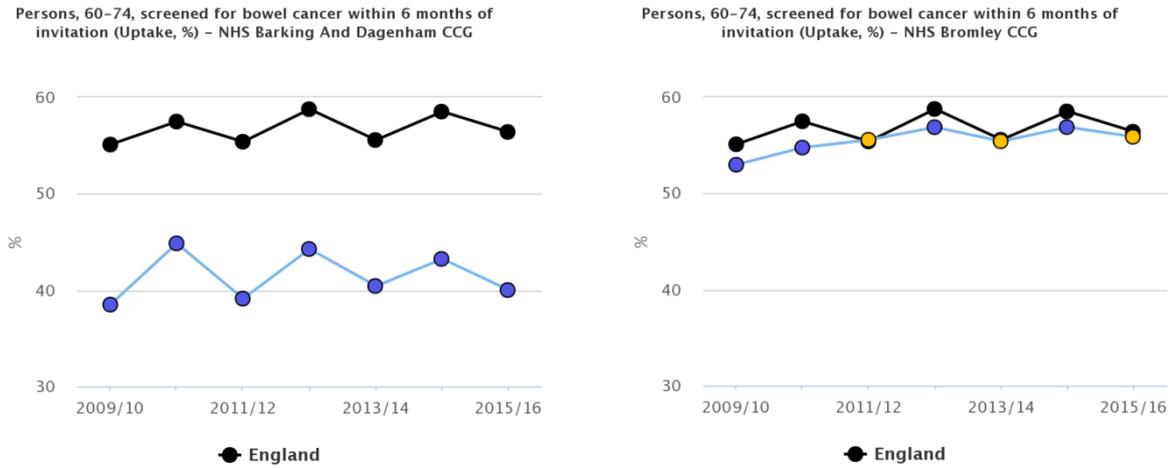
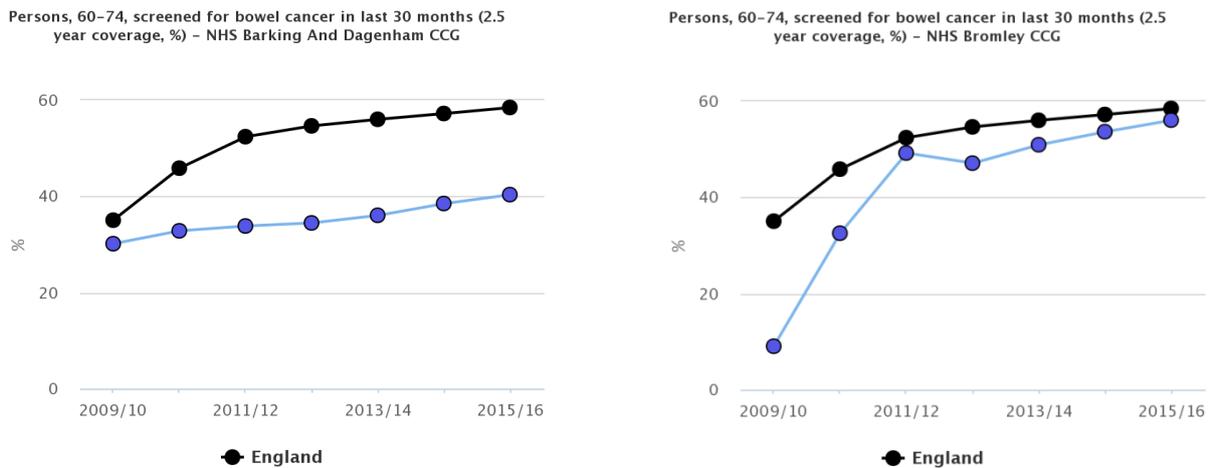


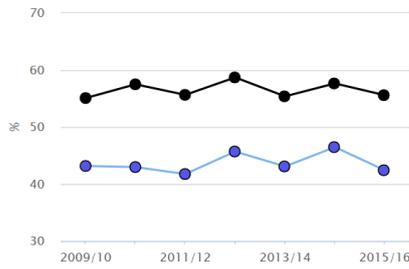
Figure 2. Trend in bowel **screening coverage** (examples are of the highest and lowest achieving London CCGs in 2015/16; screening did not begin simultaneously in all CCGs)



Source: PHE Public Health Profiles Cancer Services
<https://fingertips.phe.org.uk/profile/cancerservices>

Figure 3. Uptake (i) and coverage (ii) of bowel screening, age 60 – 69, Camden 2009 - 2016

(i)

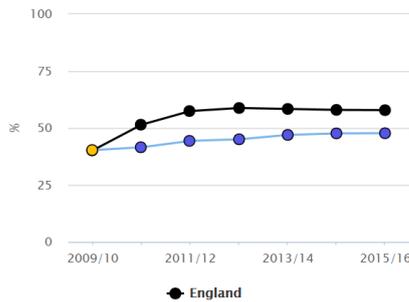


Recent trend: ↗

Period	Count	Value	Lower CI	Upper CI	London	England
2009/10	2,735	43.2	41.9	44.4	44.8*	55.1
2010/11	3,497	43.0	41.9	44.0	46.2*	57.5
2011/12	3,520	41.7	40.7	42.8	45.7*	55.6
2012/13	3,504	45.7	44.6	46.8	48.8*	58.7
2013/14	3,441	43.1	42.0	44.2	45.8*	55.4
2014/15	3,677	46.5	45.4	47.6	47.9*	57.6
2015/16	3,491	42.4	41.4	43.5	45.6*	55.6

Source: Data was extracted from the Bowel Cancer Screening System (BCSS) via the Open Exeter system. Data was collected by the NHS Cancer Screening Programme.

(ii)



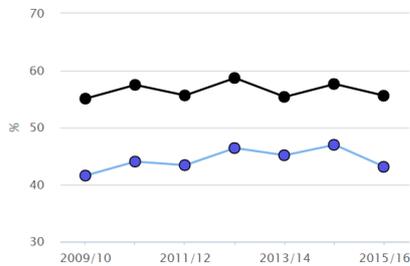
Recent trend: ↗

Period	Count	Value	Lower CI	Upper CI	London	England
2009/10	6,097	40.3	39.5	41.1	37.5*	40.2
2010/11	6,432	41.5	40.8	42.3	42.7*	51.4
2011/12	6,957	44.3	43.6	45.1	47.5*	57.4
2012/13	7,181	45.0	44.3	45.8	49.2*	58.8
2013/14	7,367	47.0	46.2	47.7	49.5*	58.4
2014/15	7,534	47.6	46.9	48.4	48.8*	57.9
2015/16	7,615	47.7	46.9	48.5	48.8*	57.8

Source: Data was extracted from the Bowel Cancer Screening System (BCSS) via the Open Exeter system. Data was collected by the NHS Cancer Screening Programme.

Figure 4. Uptake (i) and coverage (ii) of bowel screening, age 60 – 69, Islington 2009 - 2016

(i)

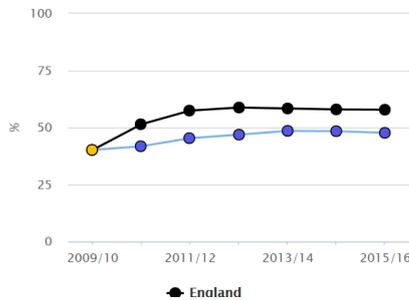


Recent trend: ↗

Period	Count	Value	Lower CI	Upper CI	London	England
2009/10	2,276	41.6	40.3	42.9	44.8*	55.1
2010/11	3,155	44.0	42.9	45.2	46.2*	57.5
2011/12	3,214	43.4	42.3	44.5	45.7*	55.6
2012/13	3,162	46.4	45.2	47.6	48.8*	58.7
2013/14	3,244	45.1	44.0	46.3	45.8*	55.4
2014/15	3,565	47.0	45.9	48.1	47.9*	57.6
2015/16	3,354	43.1	42.0	44.2	45.6*	55.6

Source: Data was extracted from the Bowel Cancer Screening System (BCSS) via the Open Exeter system. Data was collected by the NHS Cancer Screening Programme.

(ii)



Recent trend: ↗

Period	Count	Value	Lower CI	Upper CI	London	England
2009/10	5,457	40.2	39.4	41.0	37.5*	40.2
2010/11	5,676	41.8	41.0	42.6	42.7*	51.4
2011/12	6,261	45.3	44.5	46.2	47.5*	57.4
2012/13	6,554	46.9	46.0	47.7	49.2*	58.8
2013/14	6,829	48.5	47.7	49.4	49.5*	58.4
2014/15	7,077	48.4	47.6	49.2	48.8*	57.9
2015/16	7,191	47.7	46.9	48.5	48.8*	57.8

Source: Data was extracted from the Bowel Cancer Screening System (BCSS) via the Open Exeter system. Data was collected by the NHS Cancer Screening Programme.

Source: PHE Public Health Profiles Cancer Services

<https://fingertips.phe.org.uk/profile/cancerservices>

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- ¹ Good Practice Guide for Bowel, Breast and Cervical Cancer Screening In Primary Care 2016 <https://www.myhealth.london.nhs.uk/system/files/Final%20Screening%20Good%20Practice%20Guide.pdf>
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 - ³ Logan R, Patnick J, Nickerson C, Coleman L, Rutter M, von Wagner C 2011 Outcomes of the Bowel Cancer Screening Programme (BCSP) in England after the first 1 million tests Gut <http://gut.bmj.com/content/early/2011/11/22/gutjnl-2011-300843.full>
 - ⁴ <https://fingertips.phe.org.uk/profile/cancerservices>
 - ⁵ Raine R, Duffy SW, Wardle J et al Impact of general practice endorsement on the social gradient in uptake in bowel cancer screening. Br J Cancer. 2016 Feb 2;114(3):321-6
 - ⁶ Natasha Djedovic, Clinical Director London Bowel Cancer Screening Hub, cited in NHSE (London region) Bowel Screening Task and Finish Group meeting notes 21 September 2016
 - ⁷ Asaria M, Griffin S, Cookson R, Whyte S, Tappenden P (2013) Distributional Cost-effectiveness of Health Care Programmes. University of York, York, UK
 - ⁸ Shankleman J, Massat NJ, Khagram L, Ariyanayagam S, Garner A, Khatoon S, Rainbow S, Rangrez S, Colorado Z, Hu W, Parmar D, Duffy SW. 2014 Evaluation of a service intervention to improve awareness and uptake of bowel cancer screening in ethnically-diverse areas Br J Cancer. 2014 Sep 23;111(7):1440-7
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