



Public Health
England

**NHS Abdominal Aortic Aneurysm
Screening Programme**
Standards Data Report April 2017 to
March 2018

About Public Health England

Public Health England exists to protect and improve the nation's health and wellbeing, and reduce health inequalities. We do this through world-leading science, knowledge and intelligence, advocacy, partnerships and the delivery of specialist public health services. We are an executive agency of the Department of Health and Social Care, and a distinct delivery organisation with operational autonomy. We provide government, local government, the NHS, Parliament, industry and the public with evidence-based professional, scientific and delivery expertise and support.

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About PHE Screening

Screening identifies apparently healthy people who may be at increased risk of a disease or condition, enabling earlier treatment or better informed decisions. National population screening programmes are implemented in the NHS on the advice of the UK National Screening Committee (UK NSC), which makes independent, evidence-based recommendations to ministers in the four UK countries.

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Summary of recommendations

Table 1. Summary of recommendations

Standard	Recommendation	Responsibility
1a	Although this standard is well achieved providers should review those men who have not been invited to make sure that they have not missed the opportunity to be screened and that the records have been appropriately managed on SMaRT	Provider
1bi	Providers should make sure that the process for booking surveillance appointments enables appointments to be within 6 weeks either way of the due date. Providers should routinely review the SMaRT alert screen for those due to be screened.	Provider
1bii	Providers should make sure that the process for booking surveillance appointments enables appointments to be within 4 weeks either way of the due date. Providers should routinely review the SMaRT alert screen for those due to be screened.	Provider
2a	Providers are encouraged to review the inequalities toolkit for best practice on increasing coverage. Providers should use the deprivation and ethnic group report to better understand coverage within their area. Providers are also encouraged to submit any subsequent interventions to reduce inequalities to the toolkit.	Provider
2bi	Providers should review the accessibility and number of screening sites to maximise the opportunity for men to attend screening. Providers should develop local standard operating procedures to show how vulnerable men are supported.	Provider
2bii	Providers should review the accessibility and number of screening sites to maximise the opportunity for men to attend screening. Providers should develop local standard operating procedures to show how vulnerable men are supported.	Provider
3	It is recommended that providers offer men who do not turn up to their first appointment, a second appointment within the initial screening year in order to not miss out on the opportunity to be screened.	Provider
4a	Providers are encouraged to review the inequalities toolkit	Provider

	for best practice on increasing coverage. Providers should use the deprivation and ethnic group report to better understand coverage within their area. Providers are also encouraged to submit any subsequent interventions to reduce inequalities to the toolkit.	
4bi	Providers should review service accessibility for surveillance men to improve uptake (including clinic venues, geographical locations and numbers, hours and days clinics are planned). Providers should develop local standard operating procedures to show how vulnerable men are supported.	Provider
4bii	Providers should review service accessibility for surveillance men to improve uptake (including clinic venues, geographical locations and numbers, hours and days clinics are planned). Providers should develop local standard operating procedures to show how vulnerable men are supported.	Provider
7	Providers should use the monthly screener report to review individual technician's non-visualised figures. Providers should make sure equipment is checked and maintained in line with national guidance. The clinical skills trainer should undertake 4 monthly observations of screeners. Providers should have 2 technicians at each appointment, as per national guidance, so that there are 2 opportunities to scan the man.	Provider
8	The provider should make sure that there is good communication between the service and trust medical imaging and/or vascular laboratory including timely feedback of results.	Provider
9	Providers should review all men who are not referred within one day to identify areas for improvement.	Provider
10	The provider should review all men found to be inappropriately referred to identify any training needs. Providers should make sure equipment is checked and maintained in line with national guidance.	Provider
11	The provider should ensure there is good communication with the vascular service.	Provider
12	The provider should ensure there is good communication with the vascular service.	Provider

Introduction

The **NHS Abdominal Aortic Aneurysm Screening Programme (NAAASP)** aims to reduce aneurysm-related mortality through early detection, appropriate monitoring and treatment. NAAASP invites men for ultrasound screening during the year they turn 65 while men over 65 who have not previously been screened can self-refer. The programme offers quarterly or annual surveillance for all men who on initial scan are found to have a small or medium aneurysm. Men found to have a large aneurysm are referred into the care of vascular services for diagnosis and treatment.

The standards provide a defined set of measures that providers have to meet to ensure local providers are safe and effective. NAAASP published a set of revised **standards** in April 2015.

Table 2. Standards

Standard	Description
1a	Percentage of eligible cohort men who are offered an initial screen
1bi	Percentage of annual surveillance appointments due where an offer has been made for within 6 weeks of the due date
1bii	Percentage of quarterly surveillance appointments due where an offer has been made for within 4 weeks of the due date
2a	Percentage of eligible cohort men who are tested
2bi	Percentage of annual surveillance appointments due where there is a conclusive test within 6 weeks of the due date
2bii	Percentage of quarterly surveillance appointments due where there is a conclusive test within 4 weeks of the due date
3	Percentage of men not responding to first offer to whom a second offer is made within the screening year plus 3 months
4a	Percentage of eligible cohort men offered screening who are tested
4bi	Percentage of annual surveillance men offered an appointment tested conclusively within 6 weeks of the due date
4bii	Percentage of quarterly surveillance men offered an appointment tested conclusively within 4 weeks of the due date
5	Percentage of assessed images of acceptable quality (QA)
6	Percentage of images with inaccurate calliper placement, determined by review of static image (QA)

7	Percentage of screening encounters where aorta could not be visualised
8	Percentage of incomplete screening episodes
9	Percentage of men with AAA ≥ 5.5 cm referred within one working day
10	Percentage of referred men subsequently found to have an aorta < 5.5 cm on confirmatory CT or MRI scan
11	Percentage of subjects with AAA ≥ 5.5 cm seen by vascular specialist within 2 weeks
12	Percentage of subjects with AAA ≥ 5.5 cm deemed fit for intervention and not declining, operated on within 8 weeks

Standards are published annually unless they are also a **key performance indicator** (KPI) in which case they are published quarterly and annual figures are aggregated where data were provided for all 4 quarters.

Two thresholds (acceptable and achievable) are specified for each standard.

The acceptable threshold is the lowest level of performance which screening services are expected to attain to assure patient safety and service effectiveness. All screening services should exceed the acceptable threshold and agree service improvement plans to meet the achievable threshold. Screening services not meeting the acceptable threshold are expected to put in place recovery plans to deliver rapid and sustained improvement.

The achievable threshold represents the level at which the screening service is likely to be running optimally. All screening services should aspire to attain and maintain performance at or above this level.

These thresholds, definitions and reporting levels are approved by the Public Health England screening data group (PHE SDG). The SDG is a divisional group where quality assurance and programme teams come together to look at the data and intelligence needs of the screening programmes and to agree any changes that drive continuous quality improvement.

Data is presented by financial year (1 April 2017 to 31 March 2018) unless stated otherwise.

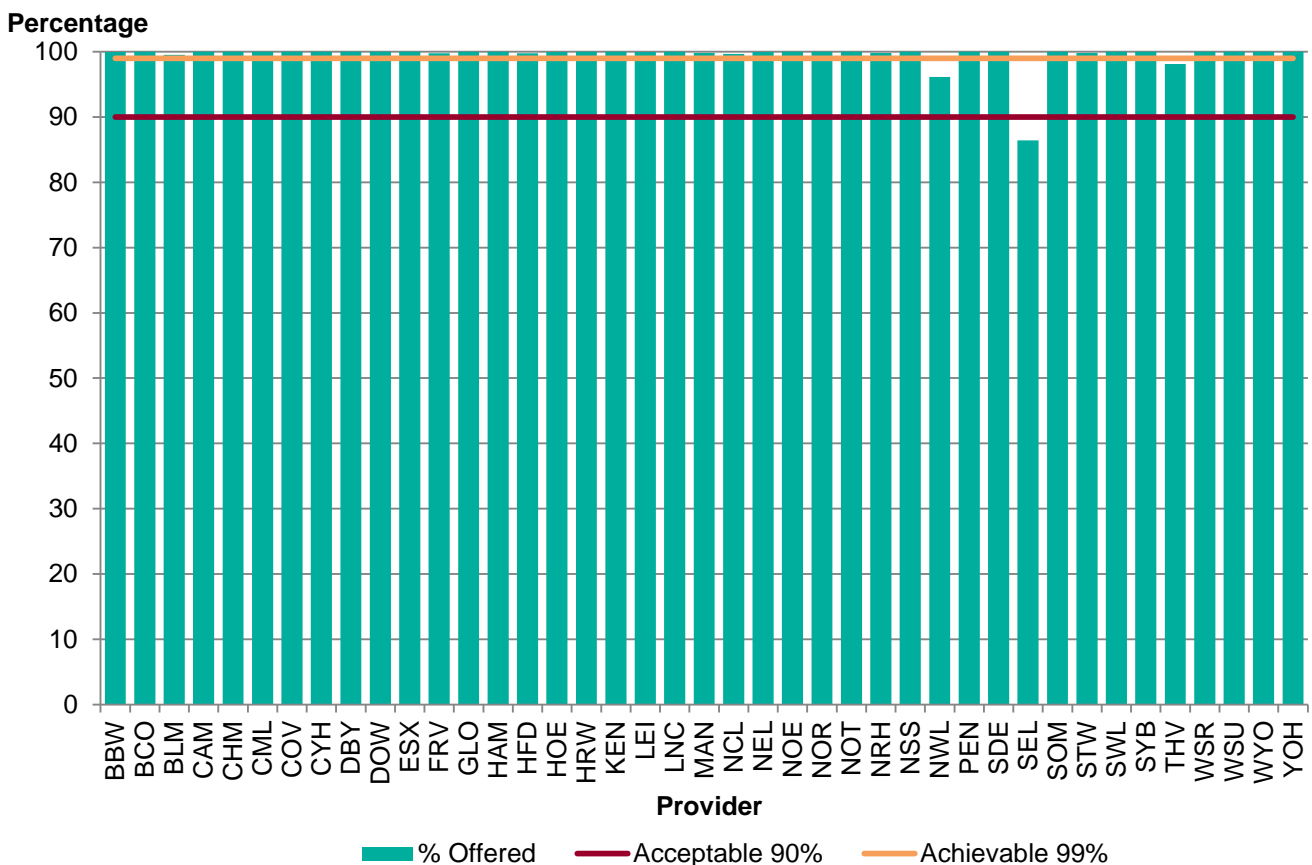
Results

Standard 1a Percentage of eligible cohort men who are offered an initial screen

Numerator	Number of eligible cohort men offered screening within the screening year plus 3 months
Denominator	Number of eligible cohort men

This standard is needed to provide assurance that screening is offered to everyone who is eligible. Men should be invited within the screening year. An additional 3 months after the end of the screening year is allowed in the event of a man being loaded into the cohort on the last day of the screening year or if a man does not attend his appointment at the end of the screening year it allows a second invitation to be sent. An offer of an appointment is not considered to be made if it has not reached the participant. Therefore if the provider has incorrect contact details or if a post office return is received the offer is not counted in the numerator.

Figure 1. Percentage of eligible cohort men offered screening within the screening year plus 3 months

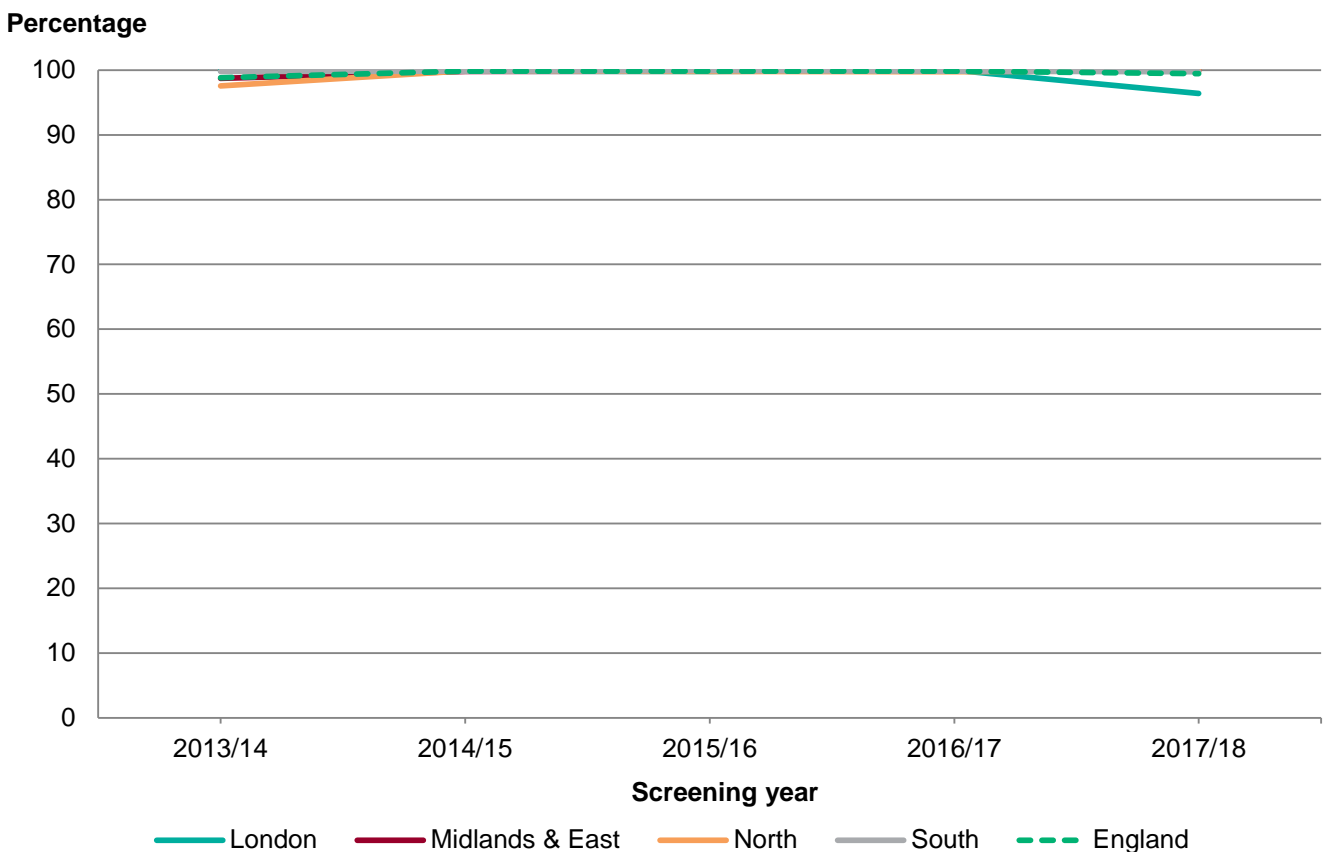


There were 285,693 men aged 65 eligible for AAA screening between 1 April 2017 and 31 March 2018. 99.4% of those eligible men were offered an initial screen. The reasons for not being invited include:

- incorrect contact details
- deferring screening
- opting out of the screening programme receiving personal details for screening
- offered after 30 June 2018
- not offered

Between 1 April 2017 and 31 March 2018, 2 providers reached the acceptable level of offering at least 90% of the eligible cohort an appointment within the screening year plus 3 months. Of the 41 providers, 38 met the achievable threshold of 99%. Only one provider did not meet the acceptable threshold. This was due to commissioning of services within the area and a loss of staff to undertake screening.

Figure 2. Percentage of eligible cohort men offered screening within the screening year plus 3 months, April 2013 to March 2018



Offer of the initial screen to men in each cohort year has been relatively stable over the past 5 years. Nationally the acceptable threshold of 99% has been met since 1 April 2014 to 31 March 2015. There was a drop in completeness of offer in the 2017 to 2018 screening year to 99.4%. This was a result of a decrease in invitations to men in the

London region during the procurement of services. The Cheshire and Merseyside AAA screening provider has shown the greatest improvement. For the April 2013 to March 2014 screening year, the figure for completeness of offer was 84.3%. This increased to 100.0% in April 2017 to March 2018.

There were 10,997 men who self-referred into the AAA screening programme between 1 April 2017 and 31 March 2018 and 99.6% were offered an initial screen. 39 men were not offered an initial screen for the reasons listed above.

Recommendations and actions

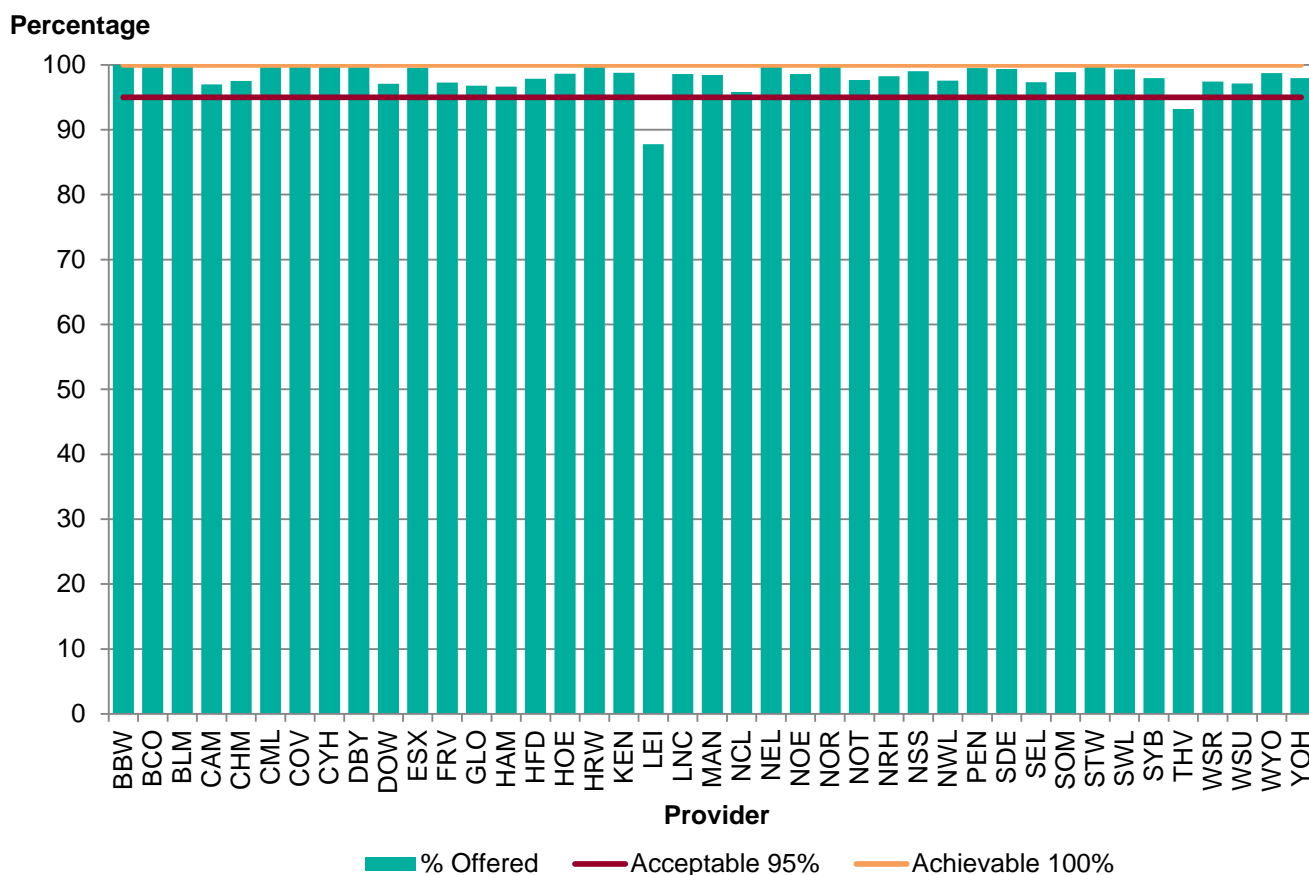
Standard	Recommendation	Responsibility
1a	Although this standard is well achieved providers should review those men who have not been invited to make sure that they have not missed the opportunity to be screened and that the records have been appropriately managed on SMaRT	Provider

Standard 1bi Percentage of annual surveillance appointments due where there is an offered appointment within 6 weeks of the due date

Numerator	Number of appointments offered within 6 weeks of the corresponding due date where the man was eligible for annual surveillance
Denominator	Number of appointments due where the man was eligible for annual surveillance

The purpose of collecting data against this standard is to ensure that all men on annual surveillance for a small aneurysm (aorta size of 3.0 to 4.4cm) are offered an appointment that occurs up to 6 weeks before or 6 weeks after when they are due to be rescreened. This is to make sure that men are tested on an annual basis and it gives an indication of screening provider capacity. The standard counts appointments rather than men as some men may have more than one appointment due during the screening year.

Figure 3. Percentage of annual surveillance appointments due where there is an offered appointment within 6 weeks of the due date, 1 April 2017 to 31 March 2018



Between 1 April 2017 and 31 March 2018 there were 12,028 annual surveillance appointments due and 11,800 had an offer within 6 weeks of their due date (98.1%). There was little variation across the country; the interquartile range was 2.2%. Two

providers did not meet the acceptable threshold of offering 95.0% of annual surveillance appointments within 6 weeks of when they are due. There were 31 providers who met the acceptable threshold of 95.0% and 8 providers met the achievable threshold of 100.0%.

The national AAA screening programme introduced the surveillance standards in April 2015 following a year developing and piloting the standards with the local screening providers. 11 providers had an increase in the percentage of annual surveillance appointments with an offer within 6 weeks of the due date between 2016 to 2017 and 2017 to 2018. 24 providers had no change and 6 had a decrease. The largest improvement was for the Bristol, Bath and Weston provider which had a 7.1% increase to 100% for 1 April 2017 to 31 March 2018.

Recommendations and actions

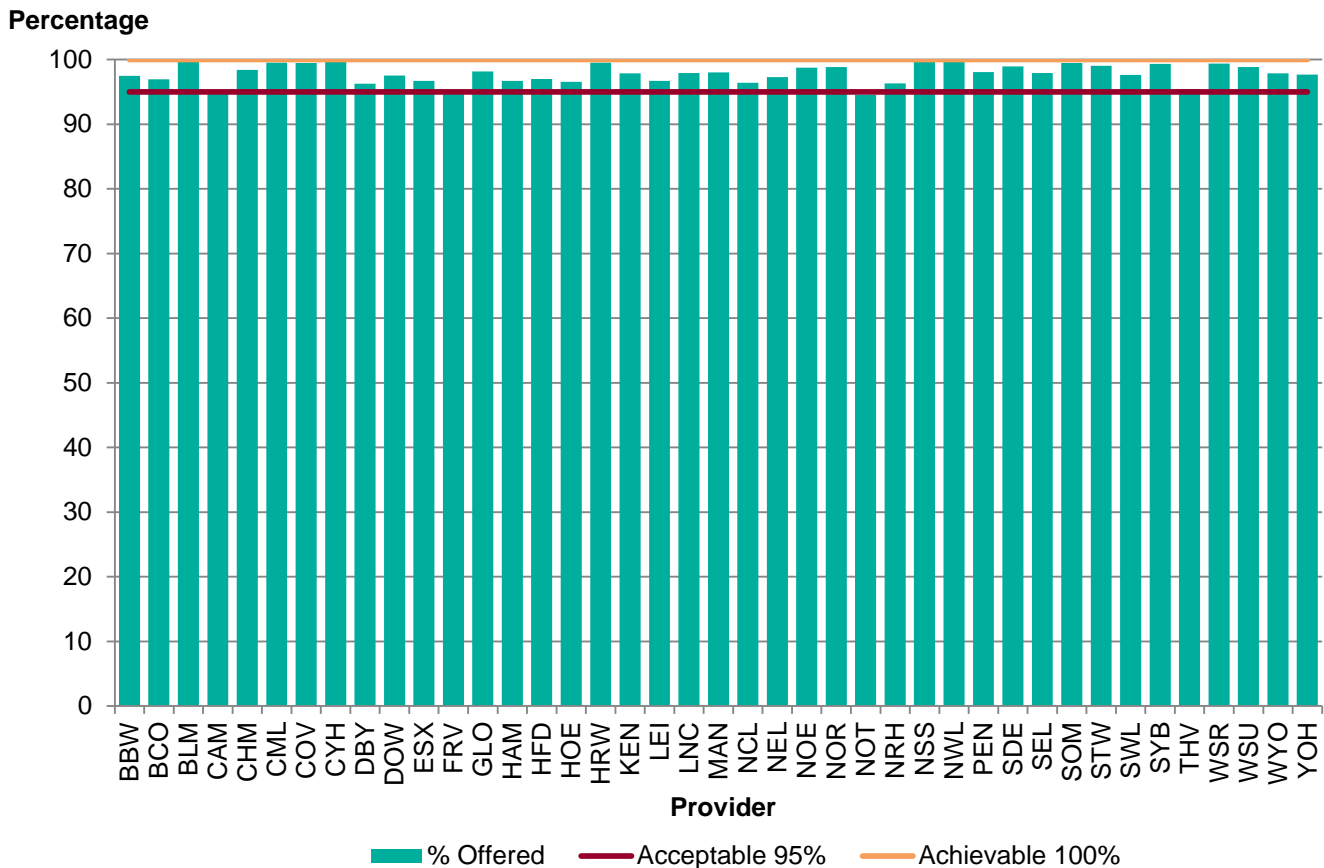
Standard	Recommendation	Responsibility
1bi	Providers should make sure that the process for booking surveillance appointments enables appointments to be within 6 weeks either way of the due date. Providers should routinely review the SMaRT alert screen for those due to be screened.	Provider

Standard 1bii Percentage of quarterly surveillance appointments due where there is an offered appointment within 4 weeks of the due date

Numerator	Number of appointments offered within 4 weeks of the corresponding due date where the man was eligible for quarterly surveillance
Denominator	Number of appointments due where the man was eligible for quarterly surveillance

The purpose of collecting data against this standard is to ensure that all men on quarterly surveillance for a medium aneurysm (aorta size of 4.5 to 5.4cm) are offered an appointment that occurs up to 4 weeks before or 4 weeks after when they are due to be rescreened. This is to make sure that men are tested on a quarterly basis and gives an indication of screening provider capacity. The standard counts appointments rather than men as men will have more than one appointment due during the screening year.

Figure 4. Percentage of quarterly surveillance appointments due where there is an offered appointment within 4 weeks of the due date, 1 April 2017 to 31 March 2018



There were 8,376 quarterly surveillance appointments due between 1 April 2017 and 31 March 2018 and 8,205 appointments were offered within 4 weeks of the due date

(98.0%). As with the annual surveillance men, there is little variation across the country (interquartile range 2.3%). 2 providers were just under the acceptable threshold of 95.0% for 1 April 2017 to 31 March 2018. 35 providers reached the acceptable threshold and 4 reached the achievable threshold of 100.0%.

Between 2016 to 2017 and 2017 to 2018, 10 providers had an increase in the percentage of appointments with an offer within 4 weeks of the due date. The largest increase was an 18.6% increase to 97.9% in Lincolnshire. 17 providers had no change in the percentage of appointments offered within the timeframe and 14 had a decrease. The largest decrease was 3.9% to 94.5% in Nottinghamshire. The majority of the appointments not meeting the standard were offered one day outside of the 4 week timeframe.

Recommendations and actions

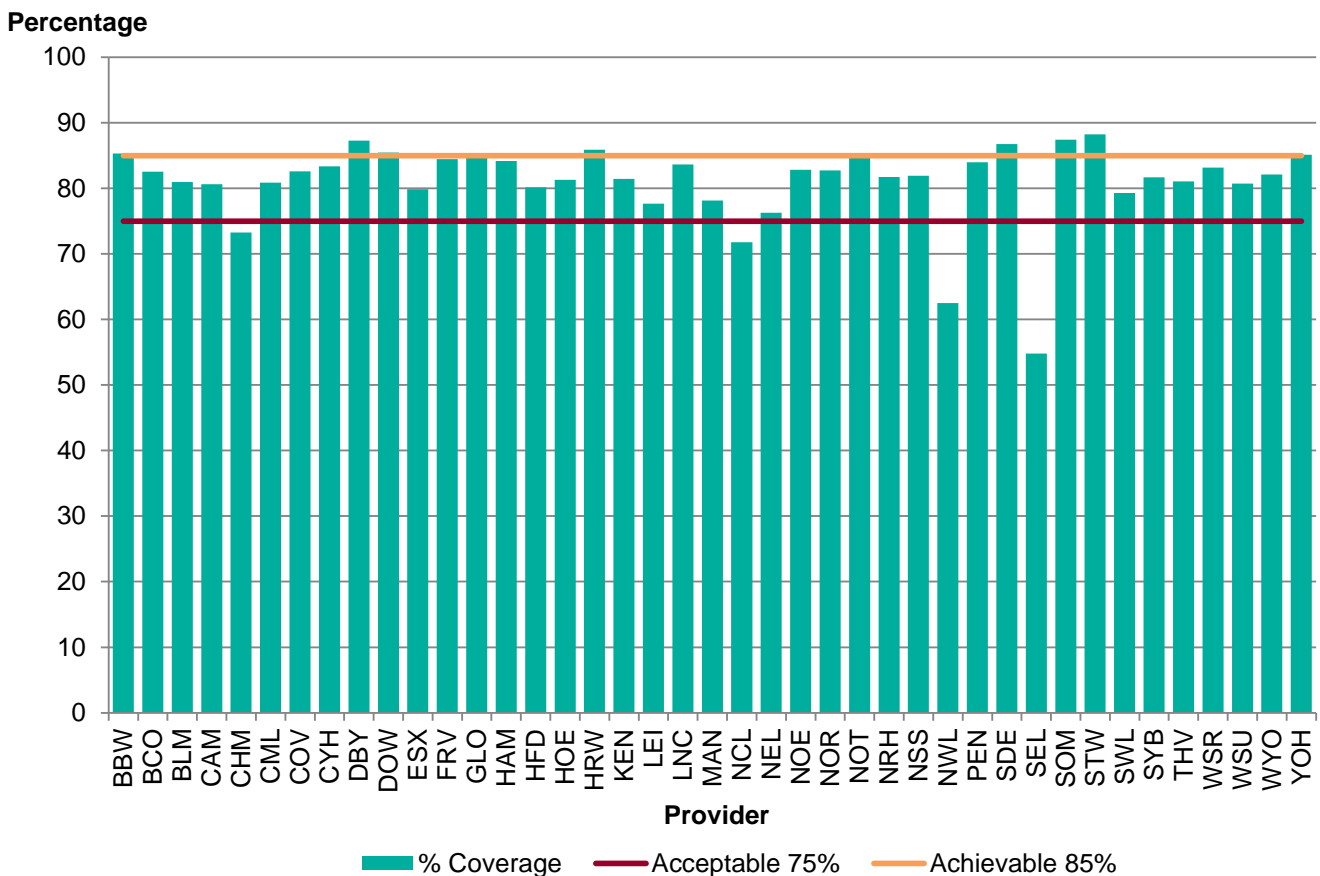
Standard	Recommendation	Responsibility
1bii	Providers should make sure that the process for booking surveillance appointments enables appointments to be within 4 weeks either way of the due date. Providers should routinely review the SMaRT alert screen for those due to be screened.	Provider

Standard 2a Percentage of eligible cohort men who are conclusively tested

Numerator	Number of eligible cohort men conclusively tested within the screening year plus 3 months
Denominator	Number of eligible cohort men

Coverage is an important measure for the screening programme as it provides an indication of the accessibility of the service and the acceptability of the screening test. This standard needs to be looked at in conjunction with the percentage of people offered an initial screen. A low coverage may be the result of people not attending the initial screening appointment, formally declining screening, or it may be because they have not been offered the screen.

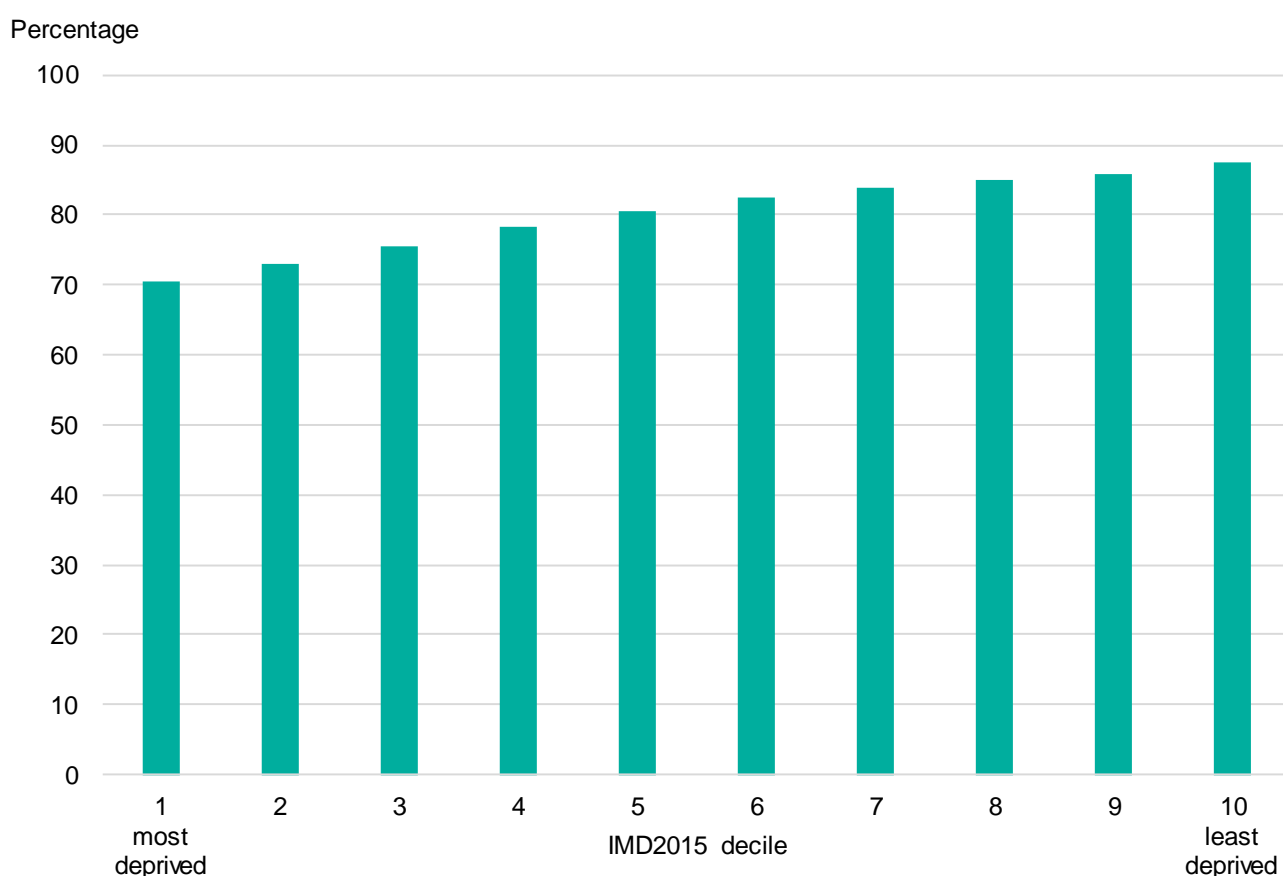
Figure 5. Percentage of eligible cohort men conclusively tested within the screening year plus 3 months



Nationally 80.5% of eligible men were conclusively tested within the screening year plus 3 months. Four providers did not meet the acceptable threshold of 75%. North Central London and North West London both ceased screening on 26 March 2018 prior to a new North London service starting from 1 April 2018. This has resulted in a lower coverage for the 2 providers this year. The South East London provider ceased screening in November 2017 which has affected coverage to a greater degree.

Cheshire and Merseyside AAA screening provider had a coverage of 73.3%, which was similar to the past 2 years (1 April 2016 to 31 March 2017: 73.9%; 1 April 2015 to 31 March 2016: 73.8%). 27 providers reached the acceptable threshold and 10 reached the achievable threshold of 85%. More providers reached the achievable threshold this year compared to last year (8 providers 1 April 2016 to 31 March 2017). The highest coverage was 88.2% in Shropshire, Telford and Wrekin, a 2 percentage point increase compared to 1 April 2016 to 31 March 2017. The Nottinghamshire provider had the largest increase from 1 April 2016 to 31 March 2017 (3.2 percentage points).

Figure 6. Percentage of eligible cohort men conclusively tested within the screening year plus 3 months by IMD2015 decile

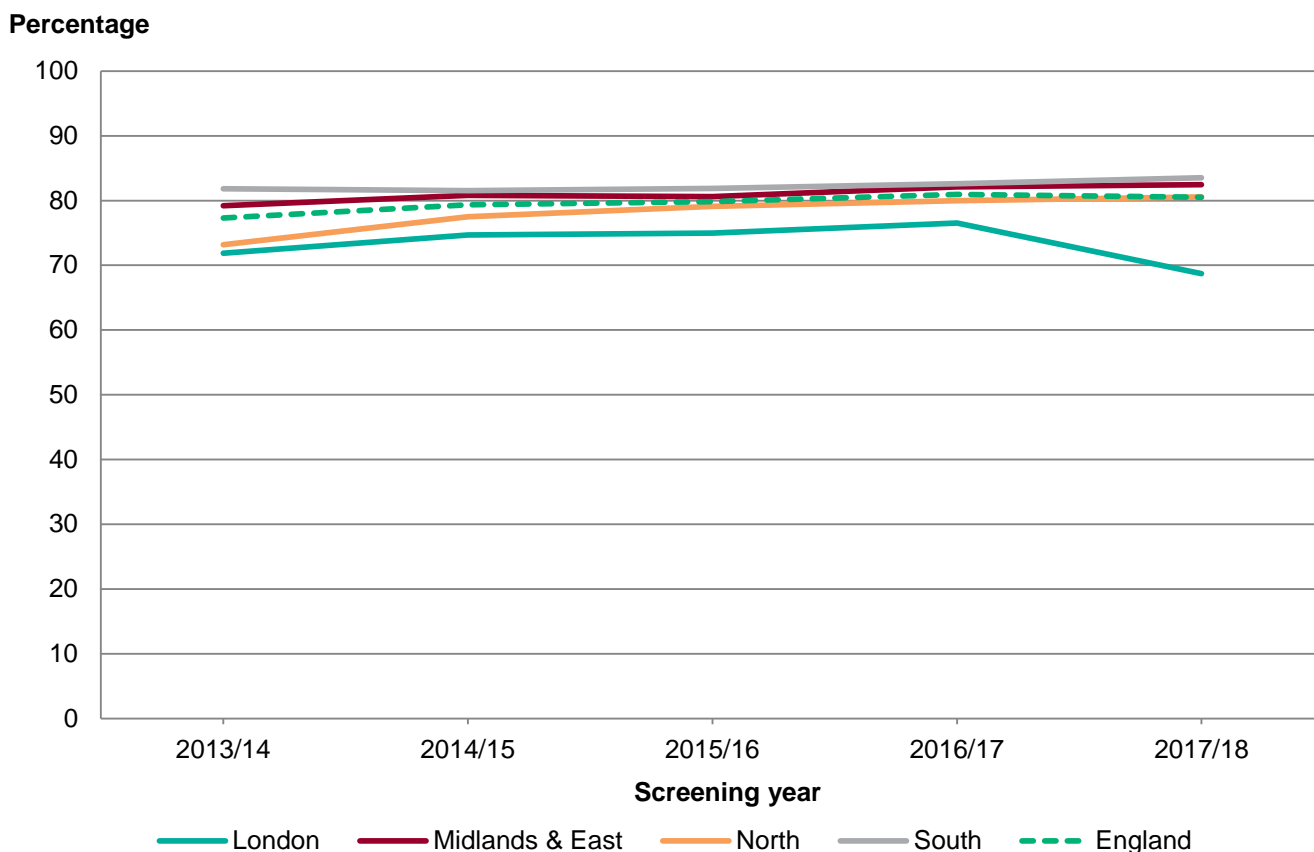


As shown in figure 6, men living in the most deprived tenth of areas of the country were less likely to attend for screening compared to those living in the least deprived areas (70.5% to 87.6%). This contrasts with the detection of aneurysms, which was highest for men living in the most deprived tenth of areas and lowest for men living in the second least deprived tenth of areas (1.35% to 0.69%).

Between 1 April 2017 and 31 March 2018, 2,323 eligible cohort men tested were found to have an aneurysm of 3.0cm or greater (1.01%). This varied from 0.53% in North West London to 1.80% in Lincolnshire. The percentage of men with aneurysms continues to decline each year, although there are some providers where the

percentage has been increasing for the past 3 years. It is thought to be due to the population of men in the area as the delivery of the screening programme in the areas has not changed and coverage has not increased significantly.

Figure 7. Percentage of eligible cohort men conclusively tested within the screening year plus 3 months, 1 April 2013 to 31 March 2018



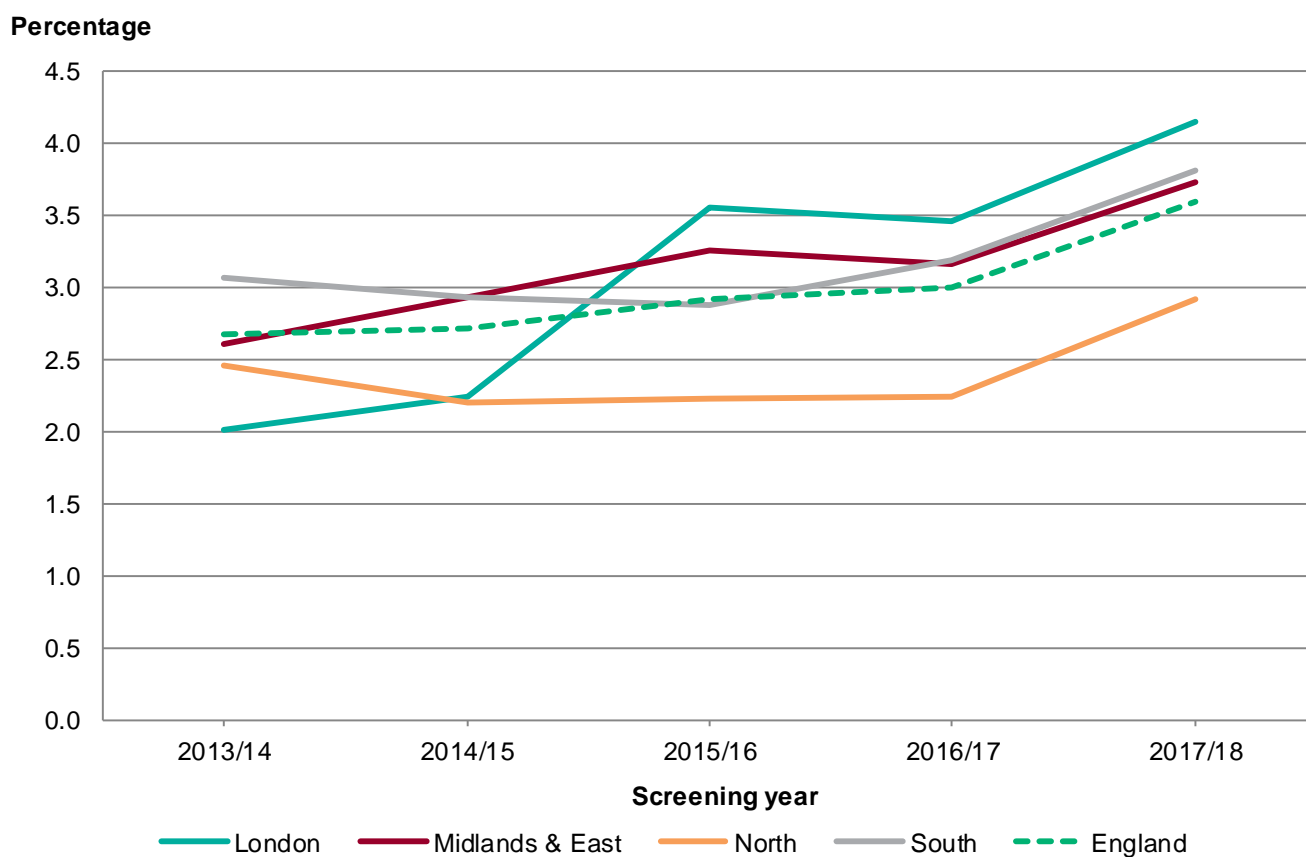
Coverage has been gradually increasing across each of the regions from 1 April 2013 onwards. However, there was a decline in coverage in London for 1 April 2017 to 31 March 2018 due to the commissioning of new services as described above.

The coverage of the initial screen in men self-referring to AAA screening was 97.4%, which was higher than for 1 April 2016 to 31 March 2017 (95.8%). Coverage ranged from 74.2% in South East London to 100% in North Central London, Herefordshire and Worcestershire, North and South Staffordshire and North Yorkshire and Humber. When the coverage of screening in self-referral men is broken down by IMD2015 decile, coverage is very similar across all groups (96.1% in decile 1 to 98.1% in decile 10) for 1 April 2017 to 31 March 2018. However, only 3.5% of the men self-referring lived in the most deprived tenth of areas in the country whereas 17.2% lived in the least deprived tenth of areas.

The percentage of aneurysms detected in self-referral men was higher than in the cohort men, 3.6%, varying from 0.0% in North East London to 9.1% in Cambridgeshire.

The risk of developing an aneurysm increases with age resulting in a higher detection rate in men self-referring into the programme. As shown in figure 8, the percentage of aneurysms detected in self-referral men has been increasing each year since 1 April 2013 to 31 March 2014. There has been a particularly large increase between the last 2 screening years. Between 1 April 2017 and 31 March 2018 the self-referring men with an aneurysm were between the ages of 66 and 95. The average age was 77 years. This is similar to the previous year when the average age was 76 years.

Figure 8. Percentage of aneurysms detected in men self referring into AAA screening, 1 April 2013 to 31 March 2018



Recommendations and actions

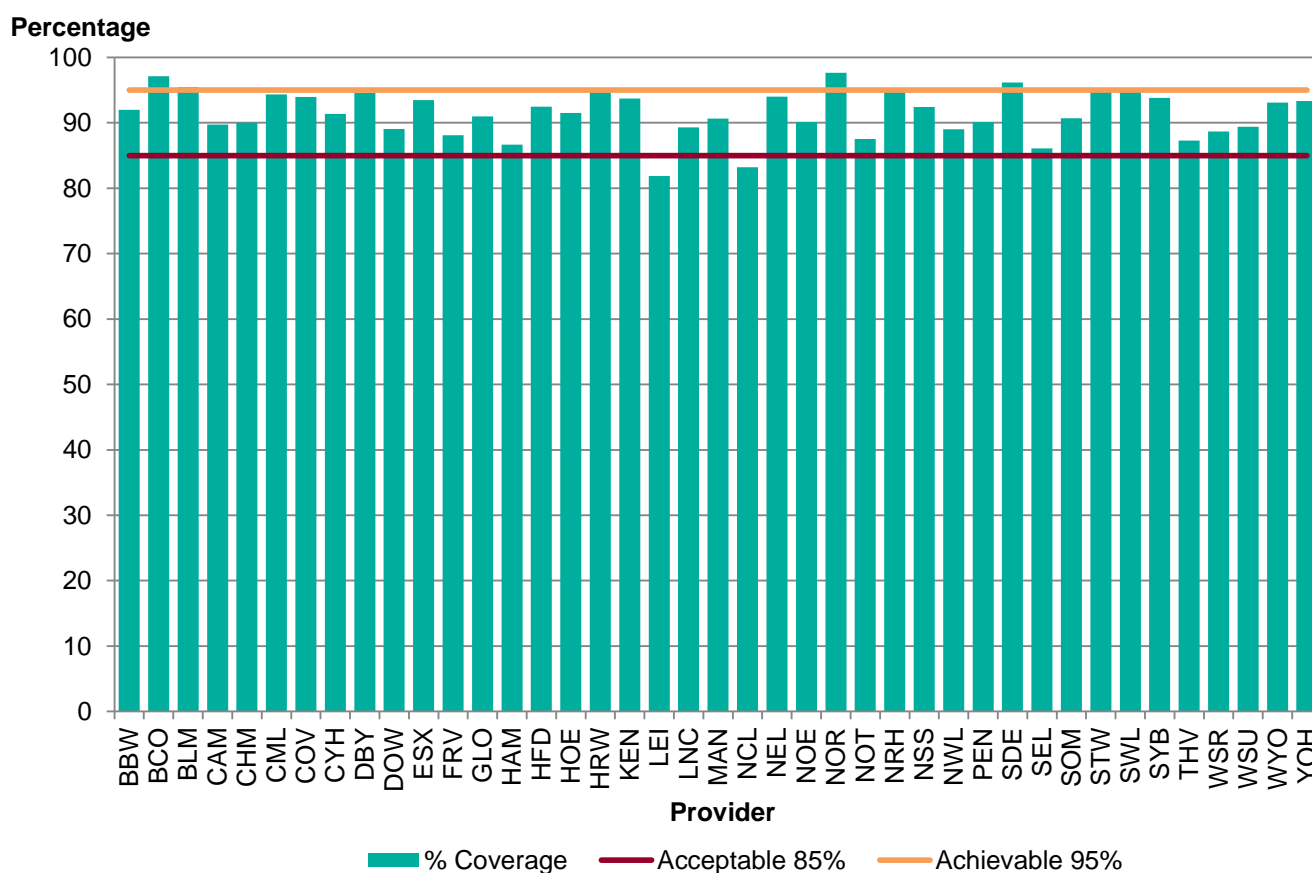
Standard	Recommendation	Responsibility
2a	Providers are encouraged to review the inequalities toolkit for best practice on increasing coverage. Providers should use the deprivation and ethnic group report to better understand coverage within their area. Providers are also encouraged to submit any subsequent interventions to reduce inequalities to the toolkit.	Provider

Standard 2bi Percentage of annual surveillance appointments due where there is a conclusive test within 6 weeks of the due date

Numerator	Number of conclusive tests occurring within 6 weeks of the corresponding due date where the man was eligible for annual surveillance
Denominator	Number of appointments due where the man was eligible for annual surveillance

Men who have an aneurysm are at an increased risk of rupture. So it is important for men to be screened in a timely manner. For men with a small aneurysm they should be screened on an annual basis. This standard should be looked at in conjunction with the percentage of annual surveillance appointments offered within 6 weeks. The standard counts appointments rather than men as some men may have more than one appointment due during the screening year.

Figure 9. Percentage of annual surveillance appointments due where there is a conclusive test within 6 weeks of the due date, 1 April 2017 to 31 March 2018



Of the 12,028 annual surveillance appointments due, between 1 April 2017 to 31 March 2018, 91.3% had a conclusive test within 6 weeks of the due date. This varied from 81.8% in Leicester to 97.6% in Norfolk and Waveney. Only 2 providers didn't

meet the acceptable threshold of 85%, Leicester and North Central London. For the Leicester provider, the coverage was low due in part to the capacity to offer surveillance appointments. Only 87.8% of the appointments due had an invitation within the 6 week timeframe. In North Central London, 95.8% of annual surveillance appointments due had an invite within 6 weeks. There were 35 providers who met the acceptable threshold and 4 providers met the achievable threshold of 95%.

There were 11 providers who had a decrease in the percentage of appointments with a conclusive test result within 6 weeks of the due date between from the previous screening year. A further 11 had no real change and 19 had an increase. The largest increase was in Thames Valley where there was a rise from 77.9% in 2016 to 2017, to 87.3% in 2017 to 2018.

Recommendations and actions

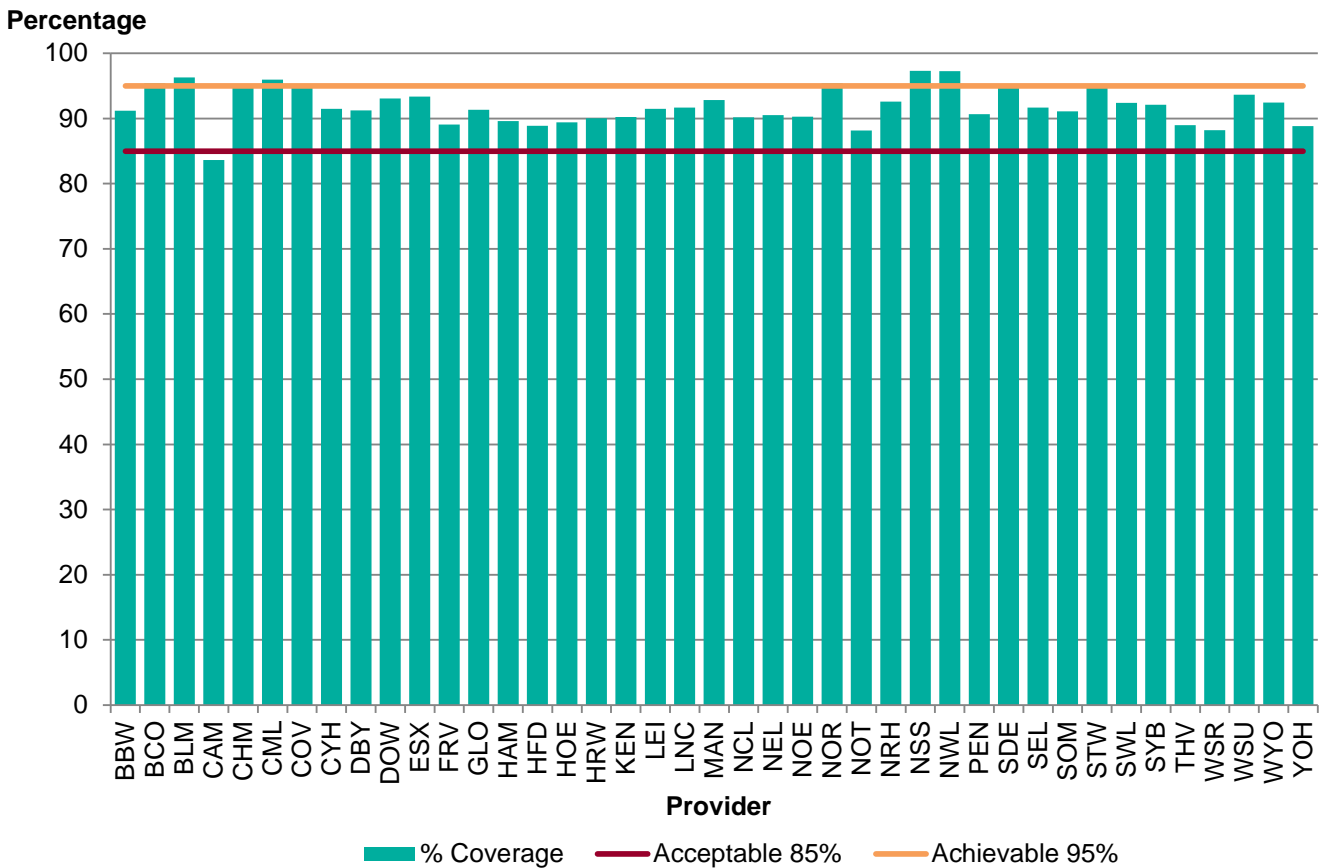
Standard	Recommendation	Responsibility
2bi	Providers should review the accessibility and number of screening sites to maximise the opportunity for men to attend screening. Providers should develop local standard operating procedures to show how vulnerable men are supported.	Provider

Standard 2bii Percentage of quarterly surveillance appointments due where there is a conclusive test within 4 weeks of the due date

Numerator	Number of conclusive tests occurring within 4 weeks of the corresponding due date where the man was eligible for quarterly surveillance
Denominator	Number of appointments due where the man was eligible for annual surveillance

Men who have an aneurysm are at an increased risk of rupture. So it is important for men to be screened in a timely manner. For men with a medium aneurysm they should be screened on a quarterly basis. This standard should be looked at in conjunction with the percentage of quarterly surveillance appointments offered within 4 weeks. The standard counts appointments rather than men will be due to have 4 appointments during the screening year.

Figure 10. Percentage of quarterly surveillance appointments due where there is a conclusive test within 4 weeks of the due date, 1 April 2017 to 31 March 2018



Of the 3,376 quarterly surveillance appointments, due between 1 April 2017 to 31 March 2018, 91.9% had a conclusive test result within 4 weeks of the due date which is similar to the coverage of the annual surveillance screen. Performance ranged from

83.6% in Cambridgeshire, the only provider below the acceptable threshold of 85%, to 97.3% in North West London and, North and South Staffordshire. There were 8 providers in total that reached the achievable threshold of 95%. Of those only 3 also met the achievable threshold for annual surveillance coverage: Black Country, Norfolk and Waveney, Bedfordshire, Luton and Milton Keynes.

There has been a small overall decline in the quarterly surveillance screen coverage from 92.4% in 2016 to 2017 to 91.9% in 2017 to 2018. However, the change varies across the country. 22 providers had a decrease from last year with the largest being 7.0% in Herefordshire and Worcestershire. 5 providers had no real change and 12 had an increase. South East London had the largest increase, 77.5% in 2016 to 2017 to 91.7% in 2017 to 2018.

Recommendations and actions

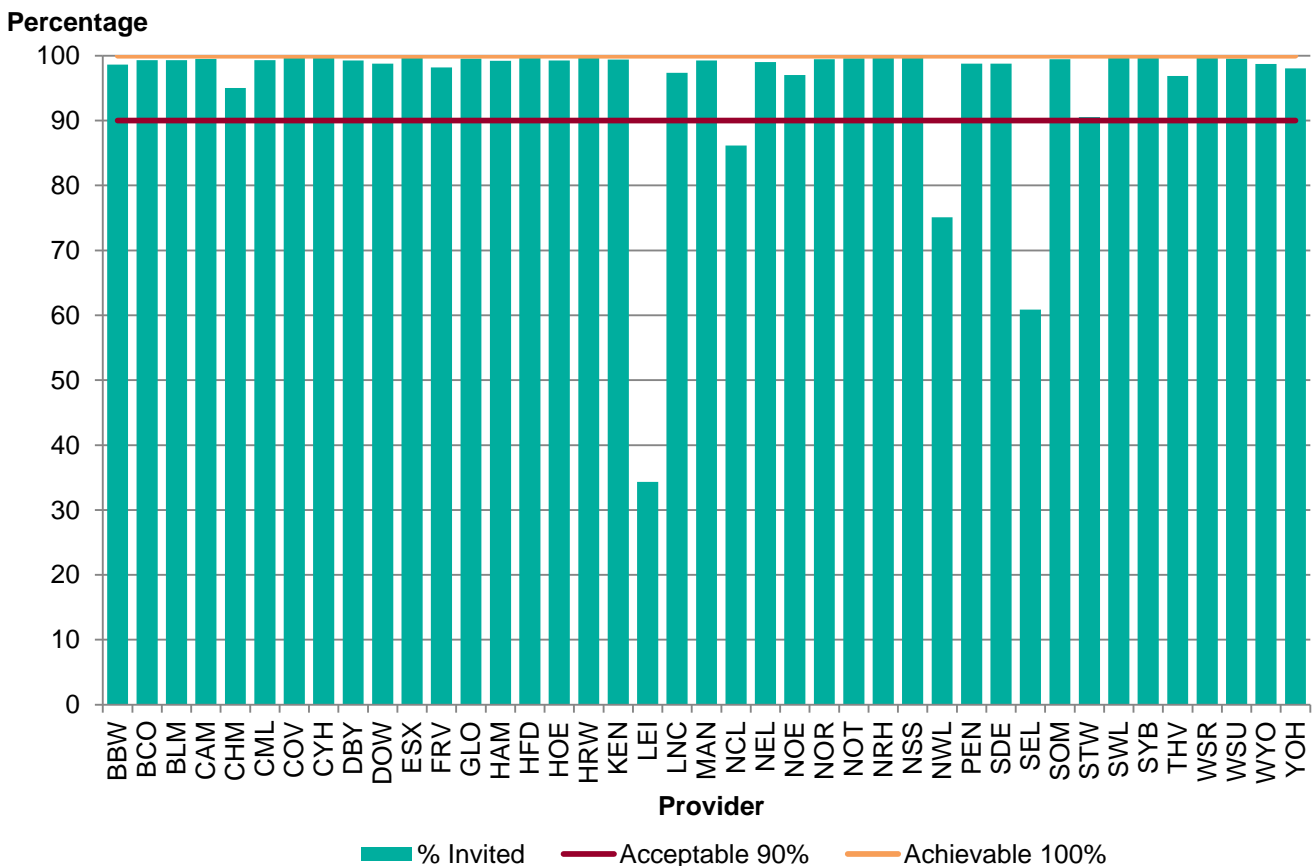
Standard	Recommendation	Responsibility
2bii	Providers should review the accessibility and number of screening sites to maximise the opportunity for men to attend screening. Providers should develop local standard operating procedures to show how vulnerable men are supported.	Provider

Standard 3 Percentage of men not responding to first offer to whom a second offer is made, where the appointment is scheduled to take place within the cohort year plus 3 months

Numerator	Number of eligible men who did not attend at first non-cancelled appointment, offered a new appointment date within the screening year plus 3 months of the first non-cancelled appointment date
Denominator	Number of men who did not attend their first non-cancelled appointment

It is recommended that providers offer men who do not turn up to their first appointment a second appointment within the initial screening year in order to not miss out on the opportunity to be screened. Some men may formally decline screening after not attending their first appointment and some providers may find that they have incorrect contact details and cannot offer a second screen. Men may also be offered a second appointment within 3 months of the end of the screening year if their original appointment was at the end of the screening year.

Figure 11. Percentage of men not responding to first offer to whom a second offer is made, where the appointment is scheduled to take place within the screening year plus 3 months



Between 1 April 2017 and 31 March 2018, 67,527 (23.8%) eligible men offered AAA screening did not attend their first non-cancelled appointment. Four providers did not meet the acceptable threshold of 90%. The 3 London providers will be due in part to the commissioning of new services in the region and the ceasing of screening in March 2018.

The Leicestershire screening provider operates a different model whereby men are sent an open invitation. This is where the man can call the screening provider to arrange an appointment on a day and time that is convenient to them rather than being sent a specific date and time. The 37 remaining providers met the acceptable threshold with 24 providers over 99.0%. The highest performers were West Surrey and Central Yorkshire at 99.9%.

Achievement of this standard is high and was relatively stable prior to 2017 to 2018. It has varied from 95.8% for 1 April 2013 to 31 March 2014, to 97.8% for 1 April 2016 to 31 March 2017.

Nationally between 1 April 2015 and 31 March 2016, 36% of men who did not attend their first appointment attended a subsequent appointment. This was 39% for 2016 to 2017 and 37% for 2017 to 2018. The highest rate of attendance following a first appointment DNA between 1 April 2017 and 31 March 2018 was 54% in Somerset and North Devon.

Only 3% of men self-referring to AAA screening didn't attend their first non-cancelled appointment. However, only 87.9% were offered a second appointment after they missed their first appointment:

- some men declined a further appointment
- some men were offered a second appointment after 30 June 2018
- some were discharged due to DNA
- a small number have yet to be sent a second invite

Recommendations and actions

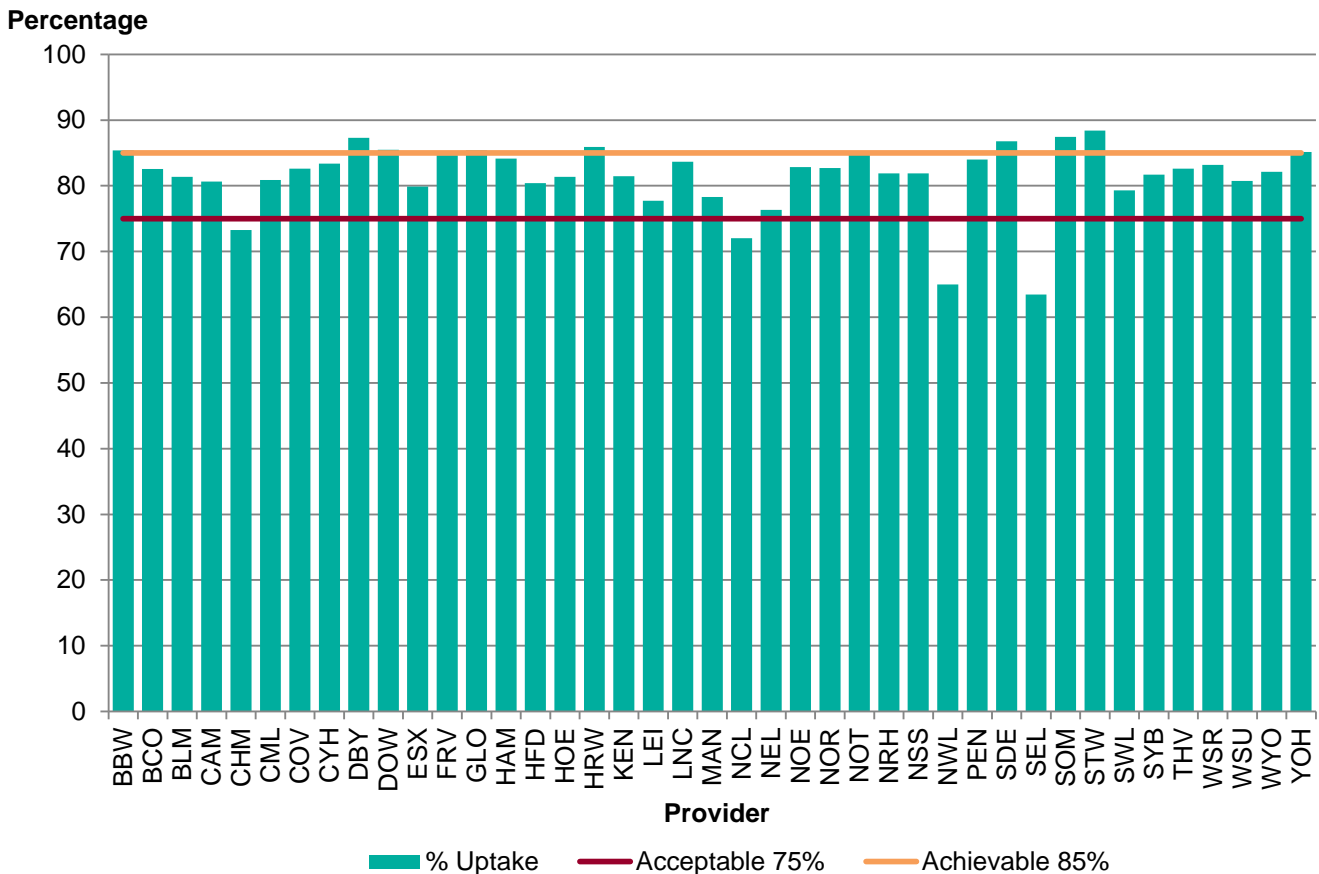
Standard	Recommendation	Responsibility
3	It is recommended that providers offer men who do not turn up to their first appointment a second appointment within the initial screening year in order to not miss out on the opportunity to be screened.	Provider

Standard 4a Percentage of men offered screening who are tested

Numerator	Number of eligible men tested at initial screen with conclusive test result which occurred within the screening year plus 3 months
Denominator	Number of eligible cohort men offered screening within the screening year plus 3 months

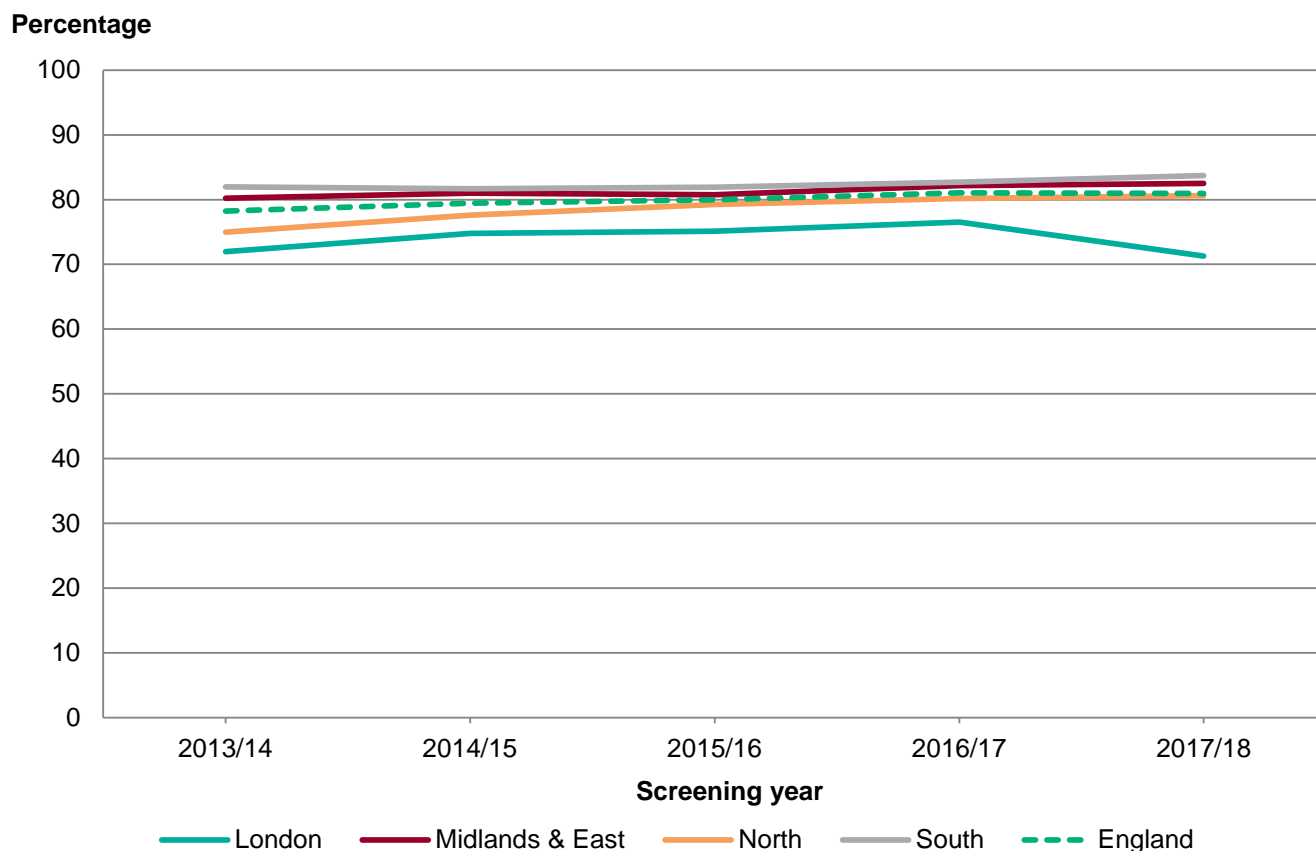
This standard gives an indication of the acceptance of the screening test in those offered the screen. Low uptake may be due to men not wishing to be screened, not understanding the importance of being screened, forgetting the appointment, or it may be because a conclusive test cannot be obtained for the patient. Due to the high percentage of men offered screening, uptake and coverage are similar for most providers.

Figure 12. Percentage of eligible men offered screening who are conclusively tested within the screening year plus 3 months



Nationally uptake was 80.9% for the screening year plus 3 months. Four providers did not meet the acceptable threshold: North Central London, North West London, South East London and Cheshire and Merseyside. 27 providers met the acceptable threshold of 75% and 10 met the achievable threshold. The Shropshire, Telford and Wrekin provider had the greatest uptake at 88.4%.

Figure 13. Percentage of men offered screening who are conclusively tested within the initial screening year plus 3 months, 1 April 2013 to 31 March 2018



As with coverage, uptake has been increasing gradually across the country from 1 April 2013. The highest national uptake was 81.1% for 1 April 2016 to 31 March 2017 and this remained similar for 1 April 2017 to 31 March 2017, 80.9%. As demonstrated in figure 11, there has been a small increase in the South region of 1% while the North and Midlands and East regions have remained similar. There has been a decrease of 5.2 percentage points in the London region. As with coverage this has been due to recommissioning of the services in London. Thames Valley had the greatest increase in uptake from the previous screening year (4.3% increase to 82.6%) while Cheshire and Merseyside had the greatest increase in uptake from 1 April 2013 to March 2014 (20.4% increase to 73.3%).

Recommendations and actions

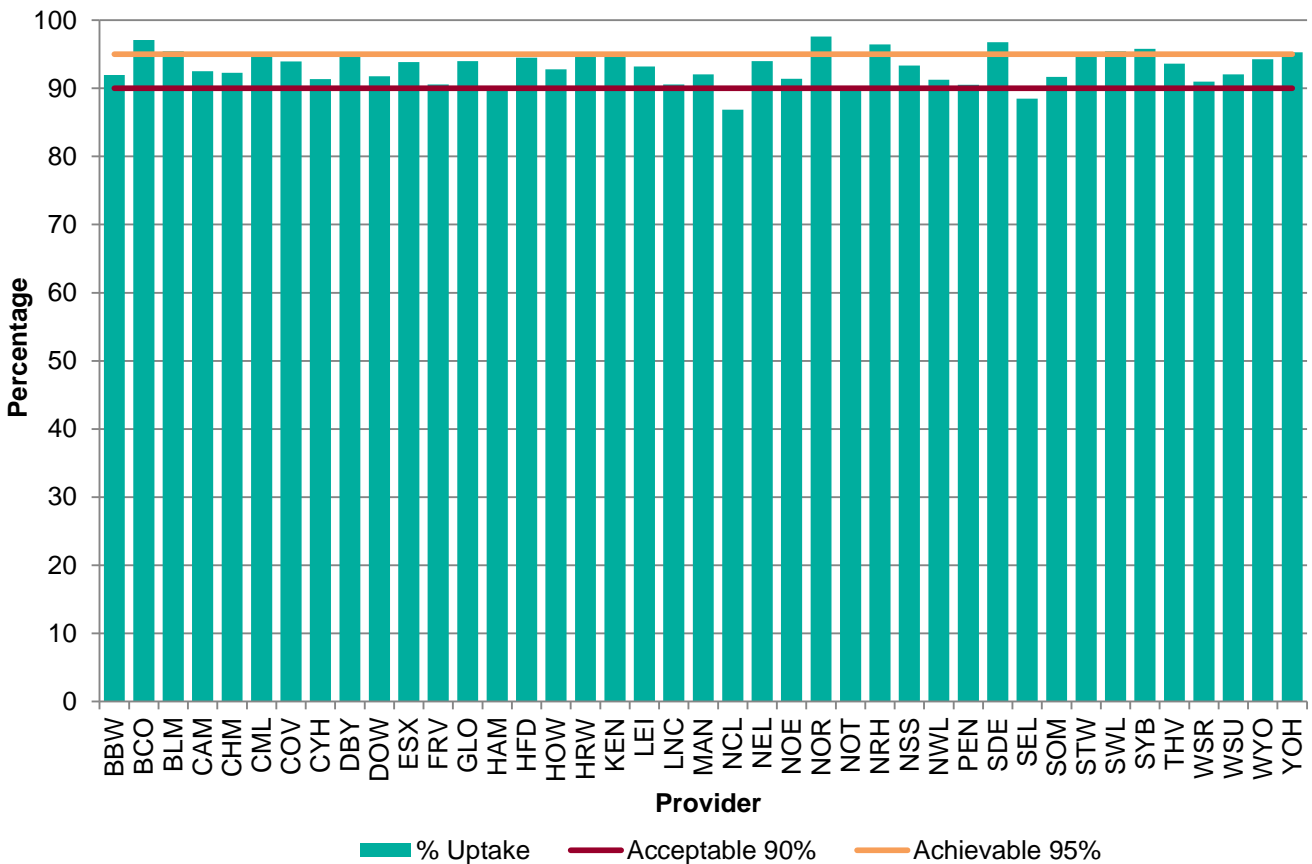
Standard	Recommendation	Responsibility
4a	Providers are encouraged to review the inequalities toolkit for best practice on increasing coverage. Providers should use the deprivation and ethnic group report to better understand coverage within their area. Providers are also encouraged to submit any subsequent interventions to reduce inequalities to the toolkit.	Provider

Standard 4bi Percentage of annual surveillance appointments offered where there is a conclusive test within 6 weeks of the due date

Numerator	Number of conclusive tests occurring within 6 weeks of the corresponding due date where the man was eligible for annual surveillance
Denominator	Number of appointments offered within 6 weeks of the corresponding due date where the man was eligible for annual surveillance

This standard gives an indication of the acceptance of the screening test in those offered the screen. A low uptake may be due to men cancelling or not attending their appointment. Some men may have also moved from annual to quarterly surveillance during the screening year or have been screened at a medical imaging department following a non-visualised screen. The standard counts appointments rather than men as some men may have been offered more than one appointment during the screening year.

Figure 14. Percentage of annual surveillance appointments offered where there is a conclusive test within 6 weeks of the due date, 1 April 2017 to 31 March 2018



Of the 11,800 annual surveillance appointments that were offered within 6 weeks of the due date, 93.0% had a conclusive test within the 6 weeks. 4 providers did not meet the

acceptable threshold of 90%: North Central London, South East London, Nottinghamshire and Hampshire. North Central London has historically had a low uptake of the annual surveillance appointment with several men repeatedly not attending appointments. South East London was just below the 90% threshold and men not conclusively tested tended to have cancelled or did not attend.

Hampshire has an issue with deactivating patients, which causes multiple due dates per man in the screening software, lowering their performance. Nottinghamshire was predominantly due to men cancelling appointments or not attending appointments and rebooking outside of the 6 week timeframe. This is a decrease compared to last year where 96.2% of men had a conclusive test within 6 weeks. 28 providers met the acceptable threshold and 9 providers met the achievable threshold of 95%. The Norfolk and Waveney provider had the highest uptake at 97.6%.

Uptake of the annual surveillance appointment was introduced as a standard from April 2015. As with standards 1bi and 1bii, they were developed and piloted during the year with 1 April 2016 to 31 March 2017 being the first year the data was reported on. Despite the national figure remaining similar to 1 April 2016 to 31 March 17 (92.9%) there have been some significant changes at the local provider level.

The largest increase was in Thames Valley where there was a 13.2% increase from 2016 to 2017 to 93.6% in 2017 to 2018. Four providers increased performance up to the achievable level: Bedfordshire, Luton and Milton Keynes, North Yorkshire and Humber, Northamptonshire and South West London. The largest decrease was by 6.8% to 89.6% for the uptake of the annual surveillance appointments in Nottinghamshire.

Recommendations and actions

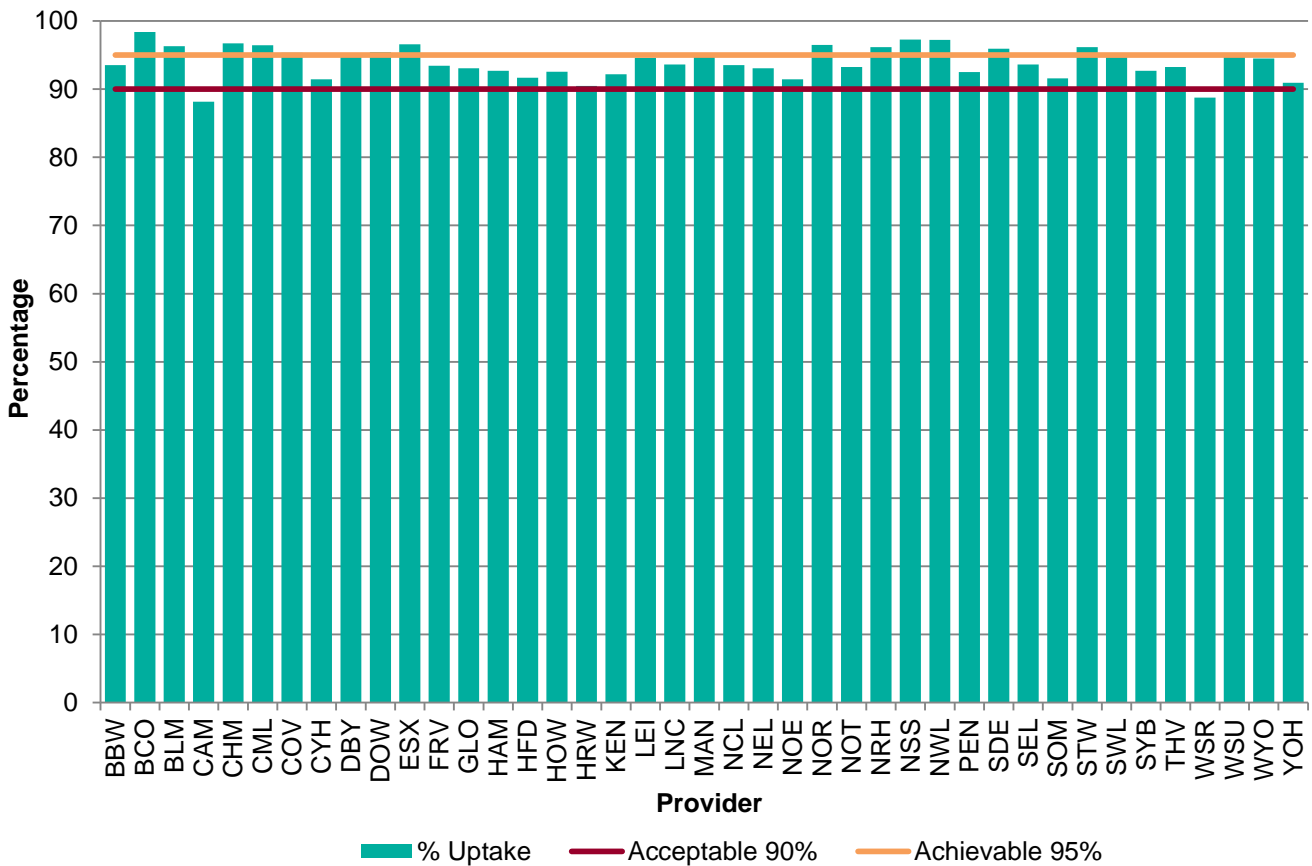
Standard	Recommendation	Responsibility
4bi	Providers should review service accessibility for surveillance men to improve uptake (including clinic venues, geographical locations and numbers, hours and days clinics are planned). Providers should develop local standard operating procedures to show how vulnerable men are supported.	Provider

Standard 4bii Percentage of quarterly surveillance appointments offered where there is a conclusive test within 4 weeks of the due date

Numerator	Number of conclusive tests occurring within 4 weeks of the corresponding due date where the man was eligible for quarterly surveillance
Denominator	Number of appointments offered within 4 weeks of the corresponding due date where the man was eligible for quarterly surveillance

This standard gives an indication of the acceptance of the screening test in those offered the screen. A low uptake may be due to men cancelling or not attending their appointment. Some men may have also moved from quarterly to annual surveillance during the screening year or have been screened at a medical imaging department following a non-visualised screen. The standard counts appointments rather than men as men will have been offered more than one appointment during the screening year.

Figure 15. Percentage of quarterly surveillance appointments offered where there is a conclusive test within 4 weeks of the due date, 1 April 2017 to 31 March 2018



Nationally 93.8% of quarterly surveillance appointments offered within 4 weeks of the due date had a conclusive test result within 4 weeks. Two providers did not reach the acceptable threshold of 90%, Cambridgeshire and West Surrey. For Cambridgeshire

the appointments that didn't have a conclusive test within 4 weeks of the due date were because of men cancelling or not attending their appointments. For West Surrey, it was mainly due to men cancelling or not attending appointments but a minority were due to men moving from quarterly to annual surveillance.

26 providers met the acceptable threshold and 13 met the achievable threshold of 95%. Black Country had the highest uptake of quarterly surveillance appointments at 98.4%. Black Country, along with 4 other providers (Bedfordshire, Luton and Milton Keynes, Norfolk and Waveney, Northamptonshire and South Devon) reached the achievable threshold for the uptake of both annual and quarterly surveillance appointments.

There was a very small decrease in the uptake of quarterly surveillance appointments between 2016 to 2017 (94.5%) and 2017 to 2018 (93.8%). 25 providers had a decrease and 16 had an increase. The greatest decrease was Herefordshire and Worcestershire by 7.7% from 98% in 2016 to 2017. The greatest increase was in North West London, by 11.7% from 2016 to 2017.

Recommendations and actions

Standard	Recommendation	Responsibility
4bii	Providers should review service accessibility for surveillance men to improve uptake (including clinic venues, geographical locations and numbers, hours and days clinics are planned). Providers should develop local standard operating procedures to show how vulnerable men are supported.	Provider

Standard 5 Percentage of assessed images of acceptable quality

This standard is not currently measured. The national AAA screening programme is working to identify an appropriate method for assessing screener performance.

Standard 6 Percentage of inaccurate calliper placements, determined by review of static image

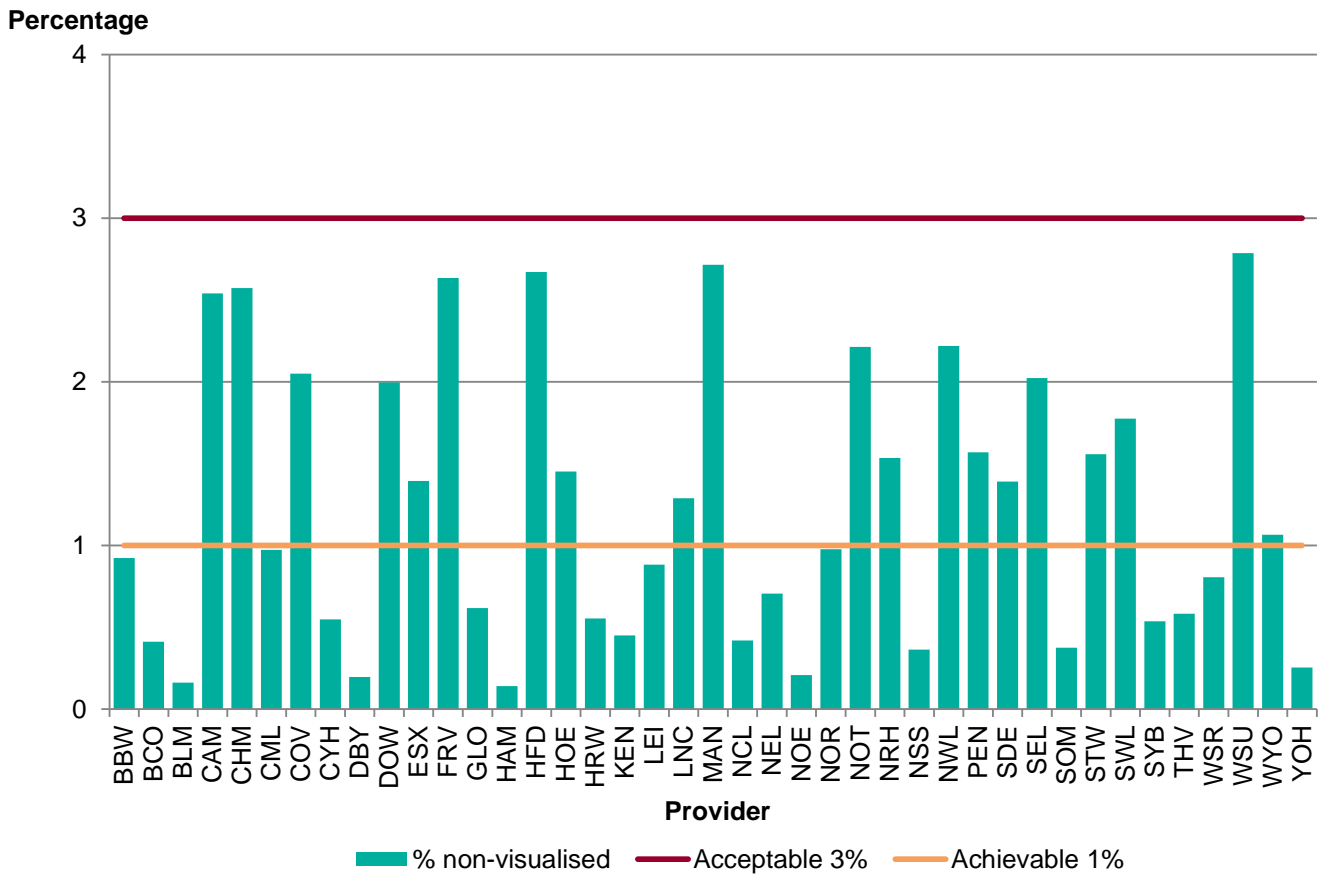
This standard is not currently measured. The national AAA screening programme is working to identify an appropriate method for assessing screener performance.

Standard 7 Percentage of screening encounters where aorta could not be visualised

Numerator	Number of tests recorded as non-visualised
Denominator	Number of screening tests

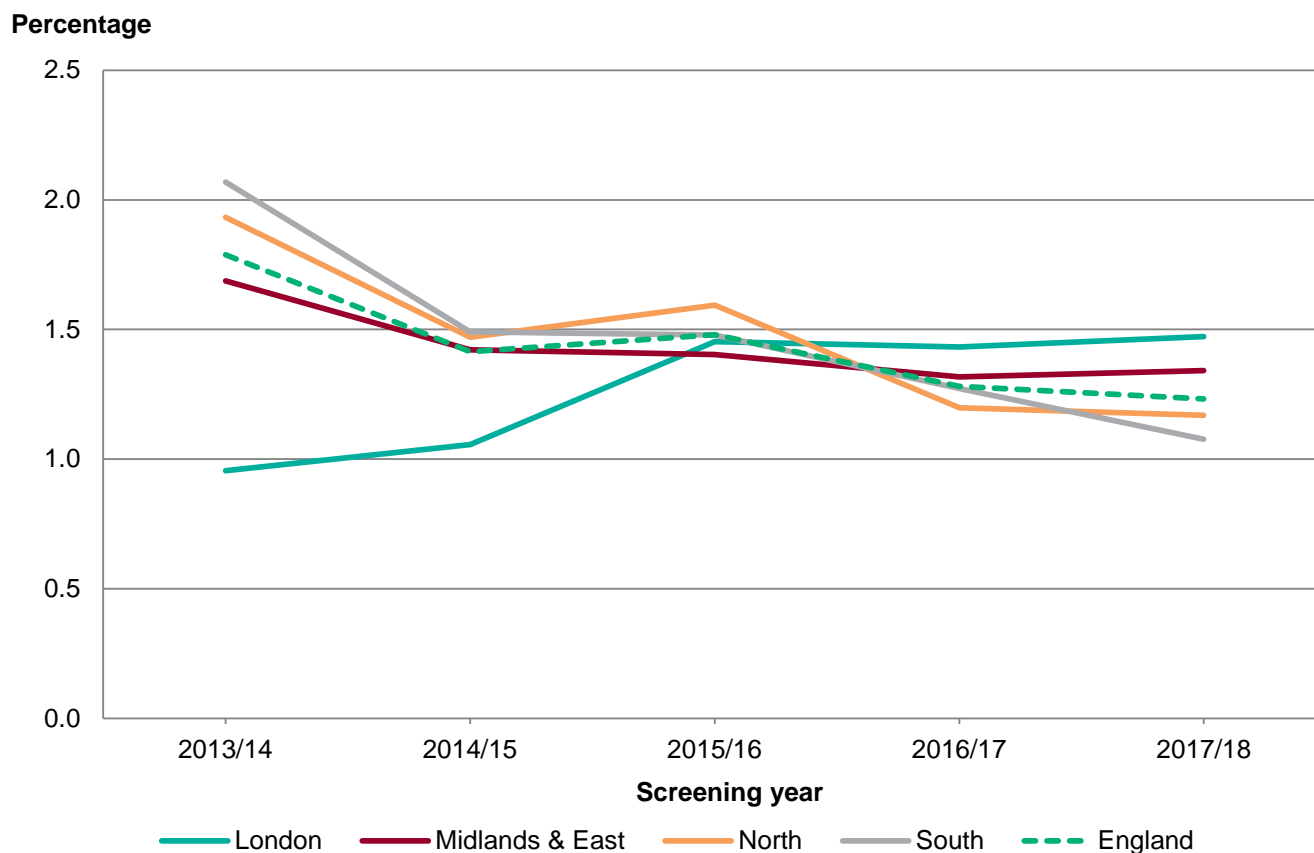
To ensure that the men who have accepted screening are able to benefit from screening it is important to monitor the number of men who do not have a successful screen. A high non-visualised rate may be due to a training issue, equipment maintenance issues or it may be a reflection of population being screened. A high body mass index, excessive bowel gas and unusual anatomy can affect the ability to obtain an adequate image. Men who have a non-visualised screen should be offered another appointment through the screening provider and if they cannot obtain an adequate image the man should be referred to the medical imaging department or vascular laboratory of the vascular service. The standard counts screens rather than men.

Figure 16. Percentage of screening encounters where aorta could not be visualised, 1 April 2017 to 31 March 2018



Screening providers should aim to minimise the percentage of screens that cannot be visualised. Therefore, the lower the value the better for this standard. All providers met the acceptable threshold of 3% non-visualised screens or fewer. 21 providers met the achievable threshold of 1% non-visualised screens or fewer. The lowest percentage of non-visualised screens was 0.14% for the Hampshire provider.

Figure 17. Percentage of screening encounters where aorta could not be visualised, 1 April 2013 to 31 March 2018



Over the past 5 years the percentage of non-visualised screens has been decreasing across England as a whole but there has been significant variation between the providers. In London there has been a small increase. This appears to be driven by an increase in non-visualised screens in South West London (87.1% increase from 1.19% for 1 April 2016 to 31 March 2017) and North West London (24.5% increase from 1.19% for 1 April 2016 to 31 March 2017). There is also a small increase in the Midlands and East region. Six providers had an increase in non-visualised screens: Cambridgeshire (43.6% increase to 2.54%), Central England (32.5% increase to 1.45%), Essex (21.5% increase to 1.39%), Hertfordshire (14.1% increase to 2.67%), Northamptonshire (16.4% increase to 1.54%) and Nottinghamshire (6.6% increase to 2.21%).

However, there have been 2 providers who have made significant improvements in reducing their percentage of non-visualised screens to under the acceptable threshold. Cheshire and Merseyside have reduced their percentage from a high of 4.64% in 2015 to 2016 to 2.57% in 2017 to 2018. Shropshire, Telford and Wrekin reduced their percentage from 4.34% in 2015 to 2016, to 1.56% in 2017 to 2018. The greatest decline in the percentage of non-visualised screens from the previous screening year was in North Central London, where there was a decrease of 65.5% to 0.42%.

Recommendations and actions

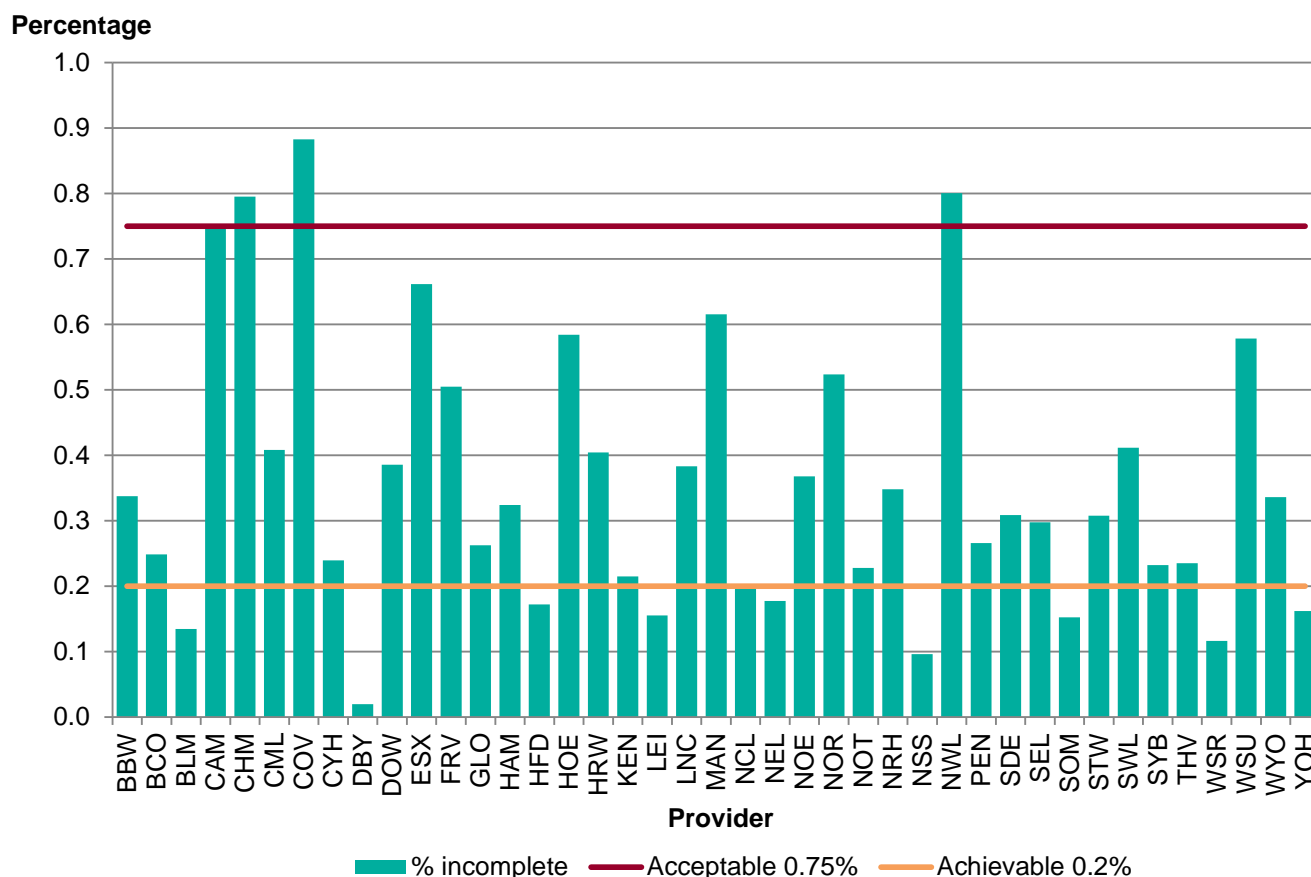
Standard	Recommendation	Responsibility
7	<p>Providers should use the monthly screener report to review individual technician's non-visualised figures. Providers should make sure equipment is checked and maintained in line with national guidance. The clinical skills trainer should undertake 4 monthly observations of screeners. Providers should have 2 technicians at each appointment, as per national guidance, so that there are 2 opportunities to scan the man.</p>	Provider

Standard 8 Percentage of incomplete screening episodes

Numerator	Number of men screened but with no conclusive test result
Denominator	Number of men scanned

To maximise the impact of the screening programme it is necessary to monitor the number of men for whom a successful scan could not be obtained in either the screening provider or the hospital medical imaging department. These men who have indicated that they wish to be screened have an incomplete screening episode as a conclusive screen was not obtained.

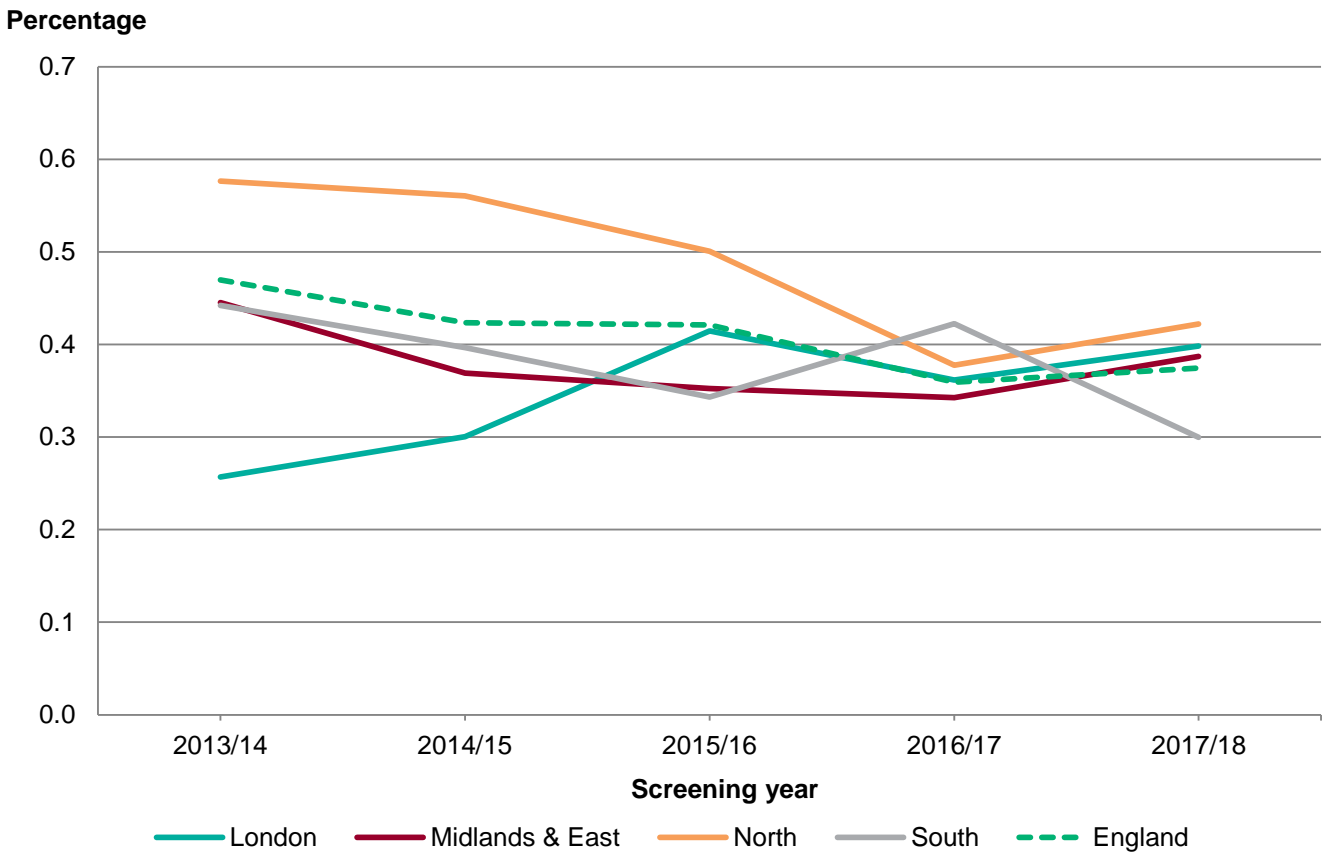
Figure 18. Percentage of incomplete screening episodes, 1 April 2017 to 31 March 2018



Nationally 0.37% of screening episodes were incomplete. As with the non-visualised screens, providers should be aiming to reduce the percentage of incomplete screening episodes. Three providers were above the acceptable level of 0.75%: North West London, Coventry and Warwickshire and Cheshire and Merseyside. North West London was 0.80% and this was an increase compared to 0.23% for 1 April 2016 to 31 March 2017. This may be a result of the commissioning of services in London and the provider not being able to offer additional scans for men who were non-visualised

on their initial screen prior to ceasing screening. Cheshire and Merseyside also had an increase compared to the previous screening year (0.64% 1 April 2016 to 31 March 2017) but the provider had over 1.0% incomplete screening episodes each year between 2013 to 2014 and 2015 to 2016. 28 providers met the acceptable threshold and 10 providers met the achievable threshold of 0.2%. The lowest percentage of incomplete episodes was in Derbyshire, where there were less than 5.

Figure 19. Percentage of incomplete screening episodes, 1 April 2013 to 31 March 2018



Nationally, the percentage of incomplete screening episodes has remained the same over the past 5 years. However, there have been small increases in the North, London and Midlands and East from the previous screening. In London, there was a large increase in North West London in particular, 0.23% in 2016 to 2017 to 0.80 in 2017 to 2018, which may be a result of the provider ceasing screening prior to the end of the screening year. In the Midlands and East region there were increases in Cambridgeshire, Central England, Coventry and Warwickshire, Essex, Five Rivers and Herefordshire and Worcestershire. The largest increase was in Central England where the percentage of incomplete screening episodes increased from 0.25% in 2016 to 2017 to 0.58% in 2017 to 2018.

In the North there were increases in Cheshire and Merseyside, Lancashire and South Cumbria, Manchester, North East and North Cumbria, North Yorkshire and Humber and South Yorkshire and Bassetlaw. The largest increase was in the South Yorkshire and Bassetlaw provider, where there was an increase from 0.09% in 2016 to 2017 to 0.23% in 2017 to 2018.

Recommendations and actions

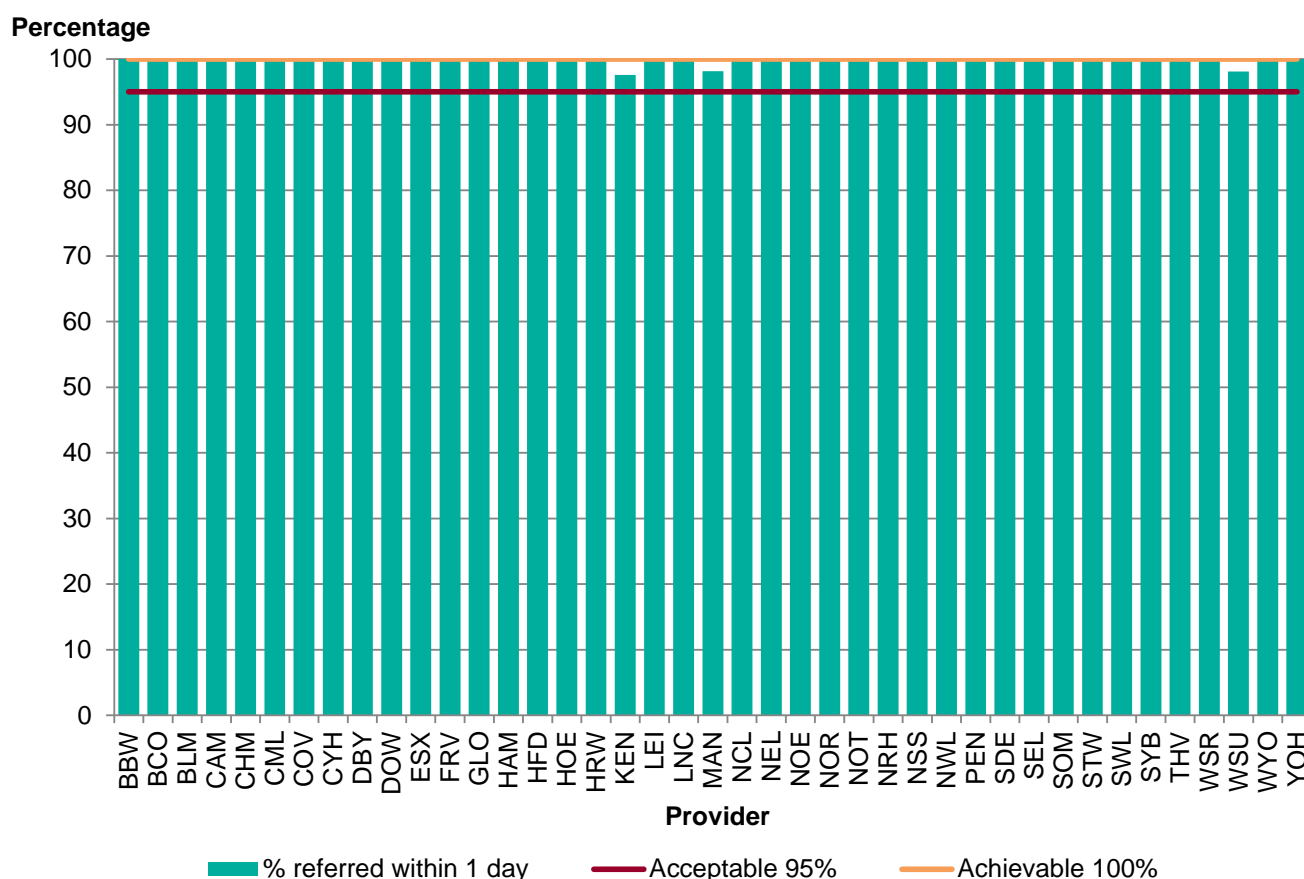
Standard	Recommendation	Responsibility
8	The provider should make sure that there is good communication between the service and trust medical imaging and/or vascular laboratory including timely feedback of results.	Provider

Standard 9 Percentage of men with AAA $\geq 5.5\text{cm}$ referred within one working day

Numerator	Number of men where the days between the latest successful screening session date and referral date is ≤ 1
Denominator	Number of men referred for surgery

Men with a large aneurysm ($\geq 5.5\text{cm}$) are at increased risk of rupture and should be seen by a vascular surgeon and operated on, if suitable for surgery, within an 8 week timeframe. Ensuring that the patient is referred within one working day is the first step in this pathway and ensures the programme does not cause unnecessary delays in the man’s treatment.

Figure 20. Percentage of men with AAA $\geq 5.5\text{cm}$ referred within one working day, 1 April 2017 to 31 March 2018



Nationally, this standard was well achieved across the country. 99.6% of men were referred to a vascular service within one day of the screen where a 5.5cm or greater aneurysm was detected. Three providers met the standard at the acceptable threshold of 95%. 38 providers met the achievable threshold of 100%.

The standard has remained stable over the past 4 years varying from 98.0% for 1 April 2014 to 31 March 2015 to 99.6% for 1 April 2017 to 31 March 2018. There have been small fluctuations in provider performance but this is often due to very small numbers, such as one man not being referred within one working day.

Recommendations and actions

Standard	Recommendation	Responsibility
9	Providers should review all men who are not referred within one day to identify areas for improvement.	Provider

Standard 10 Percentage of referred men subsequently found to have an aorta <5.5cm on confirmatory CT or MRI scan

Numerator	Number of men with a maximum aorta measurement of <5.5cm on confirmatory CT or MRI scan
Denominator	Number of men referred for surgery

In order to ensure the accuracy of the screen and therefore the appropriateness for referral to surgery all men should receive a CT or MRI scan to confirm that their aorta is ≥ 5.5 cm. A high false positive rate may be due to training or equipment maintenance issues within the screening service. However, this data has to be interpreted with caution as the numbers referred. The number of false positives are small.

Table 3. Percentage of referred men subsequently found to have an aorta <5.5cm on confirmatory CT or MRI scan by region, 1 April 2017 to 31 March 2018

Region	Number of inappropriate referrals	Number referred	Performance (%)
England	17	810	2.1
North	<5	200	-
South	6	275	2.2
Midlands & East	5	281	1.8
London	<5	54	-

There were 810 men referred for surgery between 1 April 2017 and 31 March 2018. Of those, 2.1% were found to have an aorta <5.5cm on confirmatory CT or MRI scan. The majority were men who were found to have an aneurysm <5.5cm with less than 5 men not having an aneurysm at all. In the cases where the aneurysm was less than 5.5cm, the men were retained in hospital surveillance and will be monitored until their aneurysm reaches 5.5cm.

28 providers had no false positives for men referred during the screening year. Seven providers had one false positive and 5 providers had 2 false positives. The PHE screening quality assurance service (SQAS) followed up each of the false positives with the providers to identify if any further action was required.

Recommendations and actions

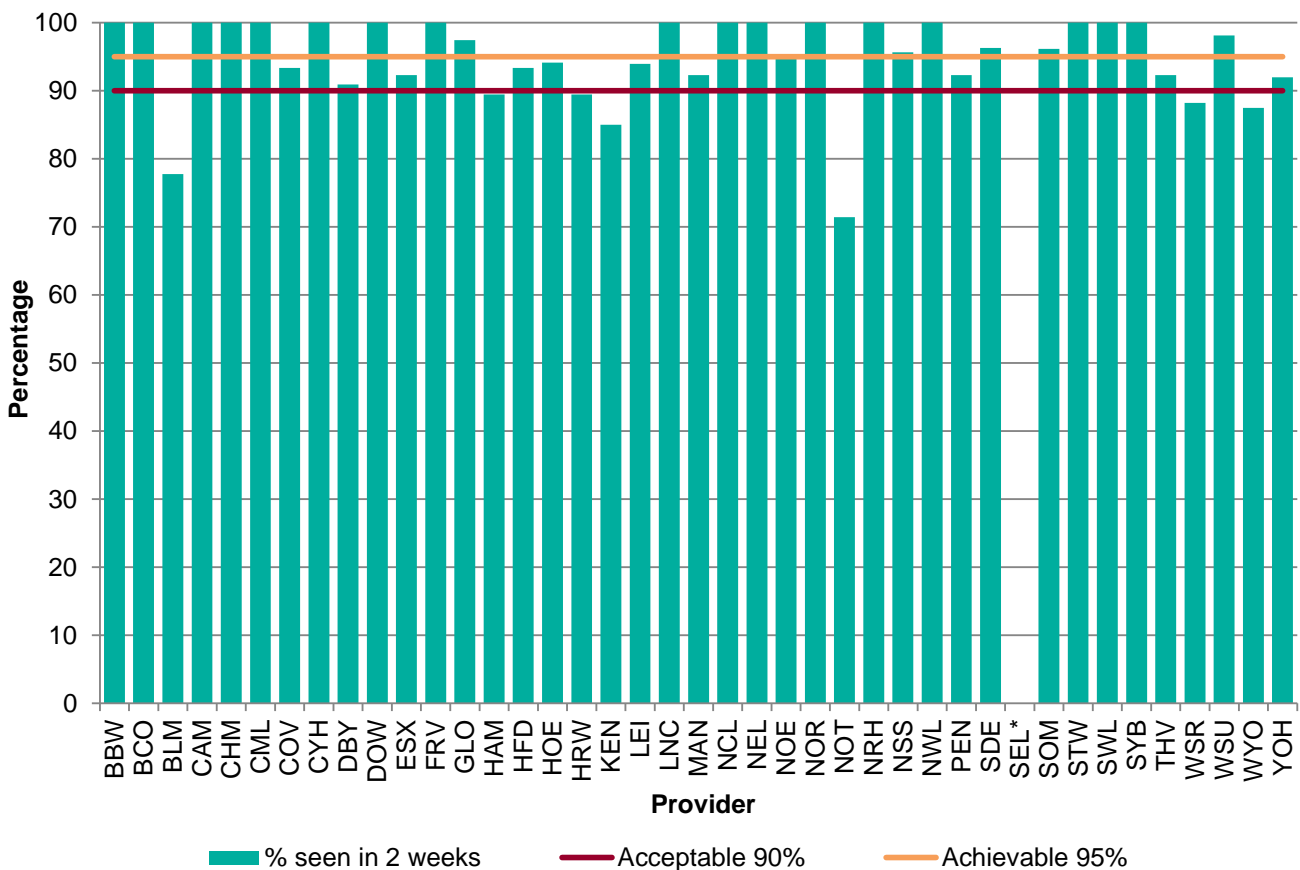
Standard	Recommendation	Responsibility
10	The provider should review all men found to be inappropriately referred to identify any training needs. Providers should make sure equipment is checked and maintained in line with national guidance.	Provider

Standard 11 Percentage of men with aorta ≥ 5.5 cm seen by vascular specialist within 2 weeks

Numerator	Number of men where days between last attended appointment and first assessment ≤ 14
Denominator	Number of men appropriately referred for surgery

Men with a large aneurysm are at risk of rupture and should be seen by a vascular surgeon and operated on, if suitable for surgery, within an 8 week timeframe. Men should be assessed for their suitability for surgery within 2 weeks of their last conclusive result so that there are no unnecessary delays in treatment or patient care.

Figure 21. Percentage of men with aorta ≥ 5.5 cm seen by vascular specialist within 2 weeks, 1 April 2017 to 31 March 2018

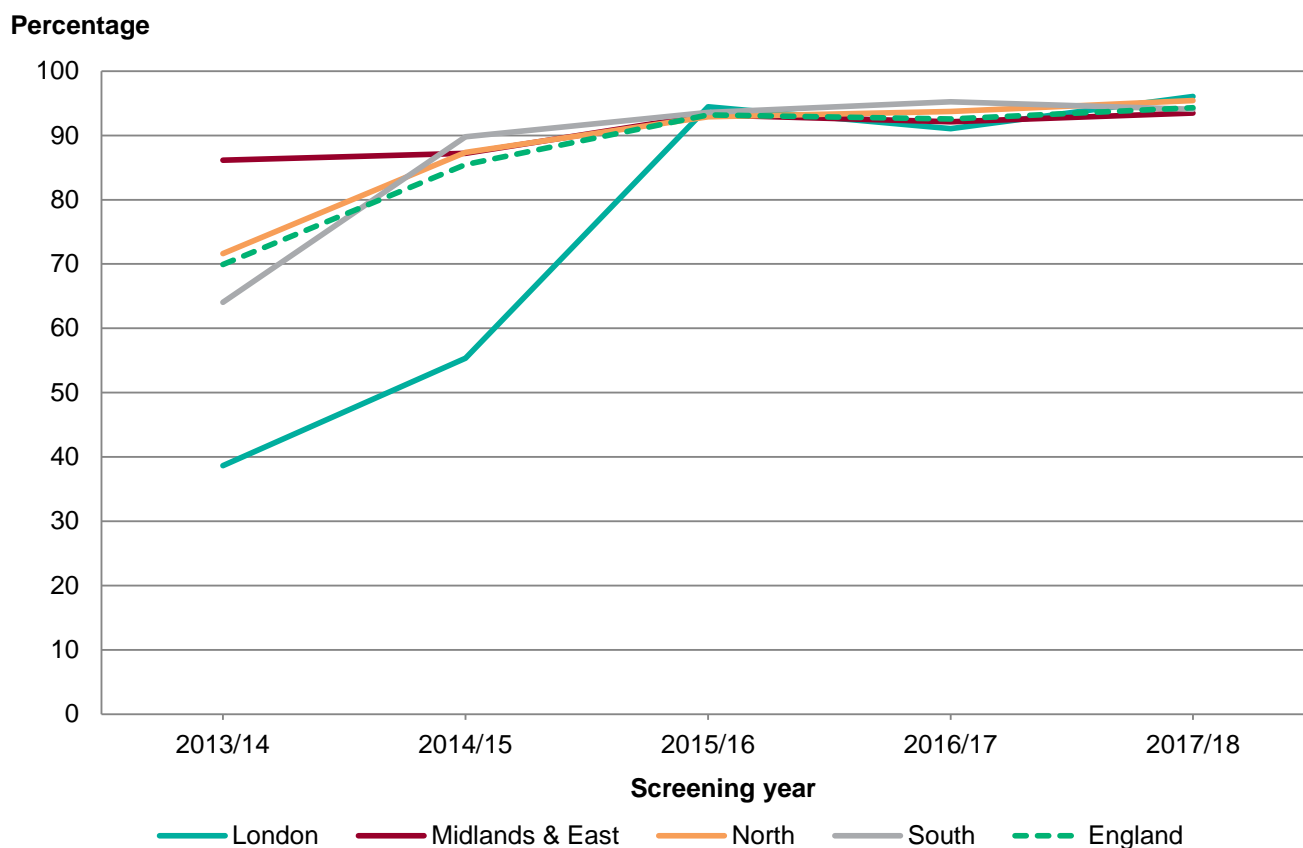


*Percentage has been masked due to numbers less than 5 referred

Of the 793 men appropriately referred for surgery, 747 (94.3%) were seen for their first specialist assessment within 2 weeks of their last conclusive scan. 8 providers did not reach the acceptable threshold of 90%. 11 providers met the acceptable threshold and 22 providers met the achievable threshold of 95%. For the men who were not seen in 2

weeks, just under half (48.9%) were due to patient choice while 42.2% were due to hospital factors. The remainder were due to comorbidities that prevented attendance.

Figure 22. Percentage of men with aorta ≥ 5.5 cm seen by vascular specialist within 2 weeks, 1 April 2013 to 31 March 2018



Nationally the percentage of men seen for a specialist assessment within 2 weeks (14 days) of their last conclusive scan has increased by 1.76 percentage points since the previous screening year. The greatest increase was in the London region, which improved by 5 percentage points. The North Central London provider had the largest increase from the previous year (63.6% in 2016 to 2017, to 91.7% in 2017 to 2018). However, South East London had the largest decrease but a very small number of men were referred between 1 April 2017 and 31 March 2018. The South region saw a 1% point decrease. This may be due to decreases in the Hampshire, Kent and Medway and West Surrey screening providers.

Recommendations and actions

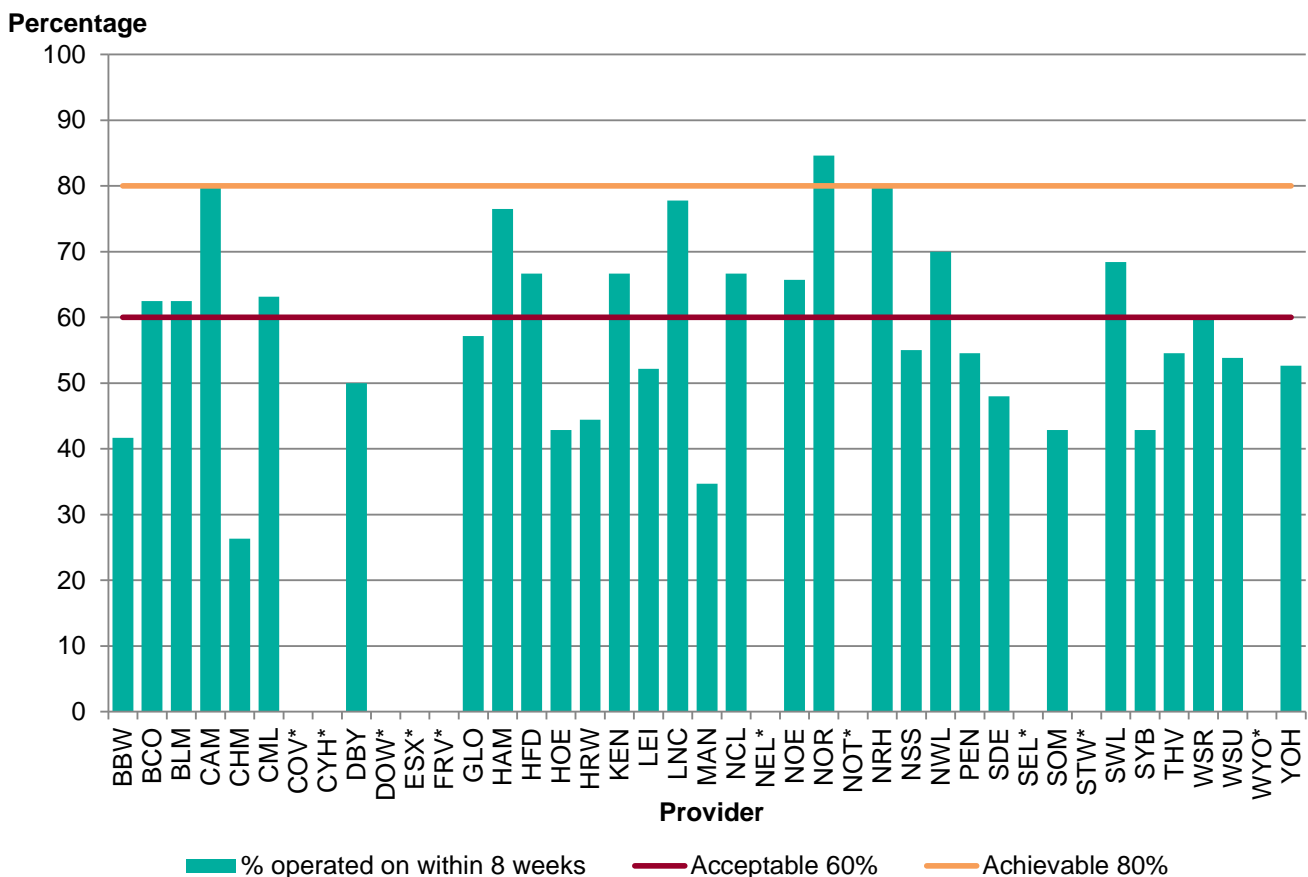
Standard	Recommendation	Responsibility
11	The provider should ensure there is good communication with the vascular service.	Provider

Standard 12 Percentage of men with aorta ≥ 5.5 cm deemed fit for intervention and not declining, operated on by a vascular specialist within 8 weeks

Numerator	Number of men referred whose surgery date was within 8 weeks of the last attended appointment
Denominator	Number of men appropriately referred for surgery, fit for intervention and not declining

Men with a large aneurysm (≥ 5.5 cm) are at increased risk of rupture and should be seen by a vascular surgeon and operated on, if suitable for surgery, within an 8 week timeframe. Delays in having surgery can occur and are the result of several factors including patient choice and hospital capacity.

Figure 23. Percentage of men with aorta ≥ 5.5 cm deemed fit for intervention and not declining, operated on by a vascular specialist within 8 weeks, 1 April 2017 to 31 March 2018



*Percentage has been masked due to numbers less than 5 operated on within 8 weeks

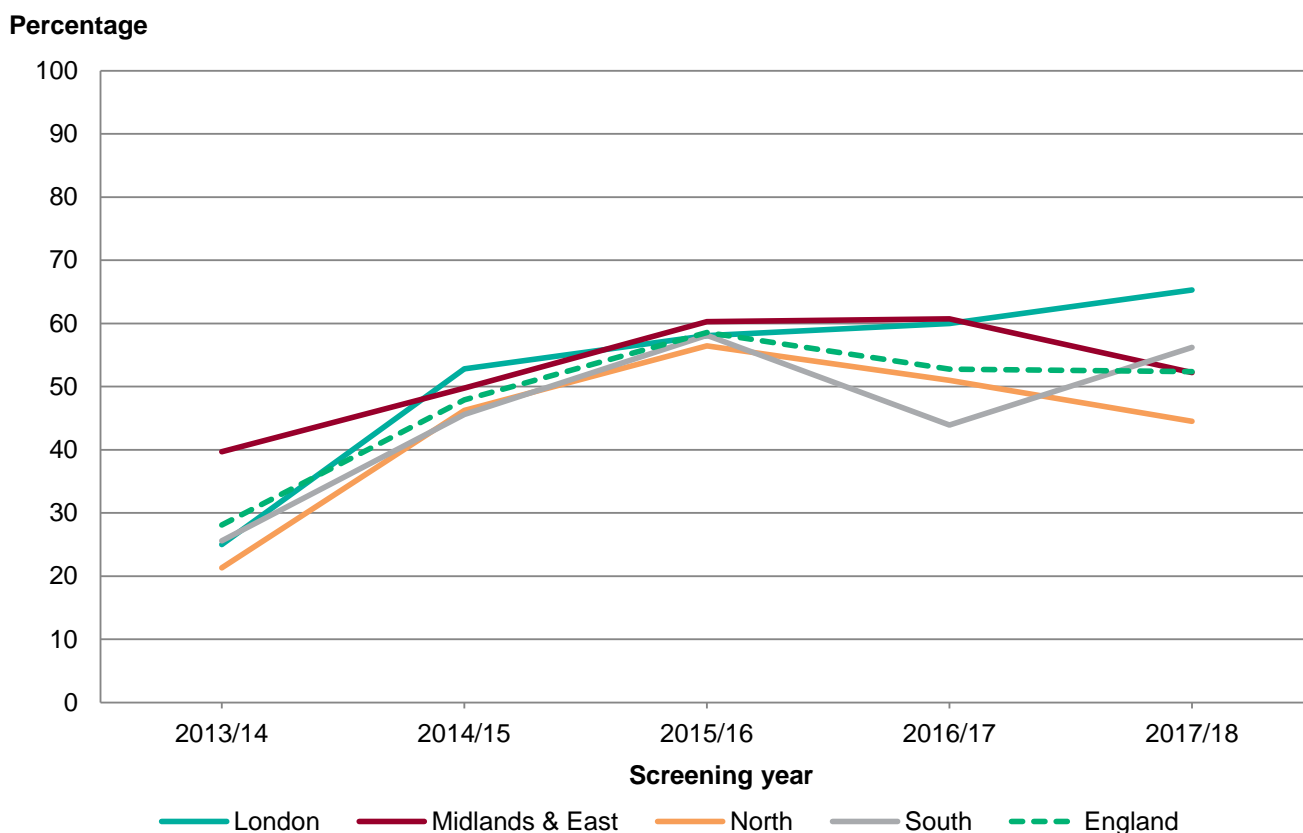
Nationally, from the 793 men who were appropriately referred, 84 men were unsuitable for surgery and 14 men declined surgery. Men who were unsuitable for surgery may have had a comorbidity that required treatment prior to the AAA repair, such as cancer treatment or the risk of surgery was greater than the risk of rupture. 52.4% of the men

who were appropriately referred, did not decline and were suitable for surgery were operated on within 8 weeks.

For the men who did not have surgery within 8 weeks, 37.5% of men had comorbidities that delayed surgical intervention. In 22.4% of cases the delay was due to hospital factors. This was a problem over the winter months where many hospitals had general capacity problems and operations were cancelled. 16.3% of men had a delay while waiting for a stent with a similar proportion opting to delay the surgery due to personal reasons. 4.8% of men required a non-standard intervention and were operated on within 12 weeks and the remainder died while waiting for their operation.

89.1% (n=619) of appropriately referred men who did not decline and were suitable for surgery were operated on in total. Nationally just over half of the surgical interventions were open repairs but there was significant variation across the country (range 0% to 72.0%). The post-operative 30 day mortality was 1.13% overall. The average wait time was 72 days (range 0 to 313 days).

Figure 24. Percentage of men with aorta ≥ 5.5 cm deemed fit for intervention and not declining, operated on by a vascular specialist within 8 weeks, 1 April 2013 to 31 March 2018



Nationally there was an increase in the percentage of men operated on within 8 weeks between 2013 to 2014 and 2015 to 2016. However, there was a decline between 2015

to 2016 and 2016 to 2017 and it has remained at a similar percentage in 2017 to 2018. The timeliness of surgical repair for AAA has been affected by several factors including the general increased demand for hospital services and winter pressures which have led to delays in elective surgeries. There has also been an increase in the waiting times for custom made stents.

Men are also being referred at an older age as more men are being referred from surveillance. In 2013, 60.3% of men were referred from their initial screen compared to 32.3% in 2016. As a consequence, the men referred tend to have more comorbidities and require more assessments for fitness prior to surgery. There have also been some genuine improvements in the waiting times for AAA repair but there have also been improvements due to the way men are recorded within the national database. Where men have had comorbidities that have required significant time for treatment and recovery, such as cancer, they have now been classified as unsuitable for surgery and have not been included in the denominator of standard 12.

Recommendations and actions

Standard	Recommendation	Responsibility
12	The provider should ensure there is good communication with the vascular service.	Provider

Outcomes

Local screening providers were notified of 18 AAA ruptures during the screening year all of which were fatal. Seven of the deaths were in men on surveillance (1.7% of the deaths in surveillance) and 11 had been referred for surgery (26.8% of deaths in men referred for surgery). For the men referred to surgery, 6 had been turned down for surgery due to comorbidities or had declined the operation. The remaining 5 died while waiting for surgery although 4 did rupture within 56 days of referral. Three of the 5 had emergency surgery but did not survive.

Provider codes

Code	Provider name	Region
BBW	Bristol Bath and Weston	South
BCO	Black Country	Midlands and East
BLM	Beds Luton and Milton Keynes	Midlands and East
CAM	Cambridgeshire	Midlands and East
CHM	Cheshire and Merseyside	North
CML	Lancashire and South Cumbria	North
COV	Coventry and Warwick	Midlands and East
CYH	Central Yorkshire	North
DBY	Derbyshire	Midlands and East
DOW	Dorset and Wiltshire	South
ESX	Essex	Midlands and East
FRV	Five Rivers	Midlands and East
GLO	Gloucester	South
HAM	Hampshire	South
HFD	Hertfordshire	Midlands and East
HOE	Central England	Midlands and East
HRW	Hereford and Worcester	Midlands and East
KEN	Kent and Medway	South
LEI	Leicester	Midlands and East
LNC	Lincolnshire	Midlands and East
MAN	Manchester	North
NCL	North Central London	London
NEL	North East London	London
NOE	North East and North Cumbria	North
NOR	Norfolk and Waveney	Midlands and East
NOT	Nottinghamshire	Midlands and East
NRH	Northamptonshire	Midlands and East
NSS	North and South Staffordshire	Midlands and East
NWL	North West London	London
PEN	Peninsula	South
SDE	South Devon	South
SEL	South East London	London
SOM	Somerset and North Devon	South
STW	Shropshire, Telford and Wrekin	Midlands and East
SWL	South West London	London
SYB	South Yorkshire Bassetlaw	North
THV	Thames Valley	South
WSR	West Surrey	South
WSU	Sussex	South

WYO	West Yorkshire	North
YOH	North Yorkshire and Humber	North
