

# NHS Abdominal Aortic Aneurysm Screening Programme

## Quality Standards and Service Objectives

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This document defines quality standards and service objectives for Abdominal Aortic Aneurysm (AAA) screening programmes in the NHS.



UK National  
Screening Committee

**NHS**

**Screening Programmes**

Abdominal Aortic Aneurysm

## Overall programme objectives

- Identify and invite eligible men to the AAA screening programme
- Provide clear, high quality information that is accessible to all
- Carry out high quality ultrasound on those men attending for initial or follow up screening according to national protocol
- Identify AAAs accurately
- Minimise the adverse effects of screening - anxiety and unnecessary investigations
- Enable men to make an informed choice about the management of their AAA
- Reduction of AAA related mortality in the population of men over 65

## Performance management thresholds

Two thresholds have been defined in relation to each of the service objectives and quality assurance standards: an **achievable** threshold, that all programmes should aim to meet, and an **acceptable** threshold, that all programmes must meet.

The **achievable** threshold represents safe and robust performance; screening programmes should budget for and aspire towards performance at this level. Local constraints may sometimes result in programmes failing to meet this threshold. Service improvement plans should focus on the delivery of a balanced service with as many standards as possible meeting the achievable threshold.

The **acceptable** threshold is the lowest level of performance considered safe. All programmes are expected to exceed the acceptable threshold, and to agree service improvement plans that develop performance towards an **achievable** level. Programmes not meeting the acceptable threshold are expected to implement recovery plans to ensure rapid and sustained improvement.

Some standards have an **unsafe** threshold. This threshold represents that a programme is operating at significant risk. A Serious Incident will usually be declared against programmes approaching or crossing the unsafe threshold, and consideration will be given to suspending screening until an appropriate remedial plan is in place.

A broken underline indicates that a term is used according to its definition in the glossary within this document.



Theme	Objective	Criteria	Metric	unsafe	acceptable	achievable
1. Identify cohort	To maximise offer of screening to all eligible population	Identification of <u>eligible</u> cohort	1.1. % of subjects on database not meeting <u>eligibility</u> criteria		≤ 20%	≤ 5%
		Accuracy of programme database	1.2. % of <u>failed offers</u> due to incorrect contact details		≤ 10%	≤ 5%
		Completeness of cohort details	1.3. % of <u>subject records</u> with insufficient contact details to make an <u>offer</u>		≤ 5%	≤ 1%
2. Inform	To maximise informed choice throughout whole screening programme	Access to leaflets/information materials (in preferred language where possible)	2.1. % of leaflets independently evaluated as high quality ( <i>external QA assessment</i> )		≥ 90%	≥ 98%
		Provision of appropriate information to all men prior to screening	2.2.(a) % of subjects who received appropriate information ( <i>external QA assessment</i> )		100%	100%
			2.2.(b) % of <u>subjects</u> who understand information provided ( <i>external QA assessment</i> )		≥ 80%	≥ 95%
		Appropriate exclusion criteria	2.3. % of <u>subjects</u> excluded from an <u>offer</u> of screening		≤ 1%	≤ 0.1%
3. Invite	To maximise uptake in eligible population who accept screening	<u>Completeness of offer</u>	3.1. % of <u>eligible subjects</u> who are <u>offered</u> screening			
			3.1.(a) initial offer		≥ 90%	100%
			3.1.(b) surveillance offer	< 85%	≥ 95%	100%
		<u>Acceptance of offer</u>	3.2. % of those <u>offered</u> screening who <u>accept</u> the <u>offer</u>			
			3.2.(a) initial offer		≥ 60%	≥ 85%
			3.2.(b) surveillance offer		≥ 90%	≥ 95%



Theme	Objective	Criteria	Metric	unsafe	acceptable	achievable
		Coverage	3.3. % of <u>eligible subjects</u> who are <u>tested</u>			
			3.3.(a) initial screen		≥ 54%	≥ 85%
			3.3.(b) surveillance screen	< 80%	≥ 85%	≥ 95%
		Provision of sufficient opportunity to attend	3.4. % of <u>subjects</u> not responding to <u>first offer</u> to whom a <u>second offer</u> is made within three months		≥ 90%	100%
4. Test	To maximise accuracy of screening test	Uptake	4.1. % of <u>subjects offered</u> screening who are <u>tested</u>			
			4.1.(a) initial offer		≥ 60%	≥ 85%
			4.1.(b) surveillance offer	< 80%	≥ 90%	≥ 95%
		Quality of images/samples/testing technique	4.2.(a) % assessed images of acceptable quality		≥ 95%	≥ 99%
			4.2.(b) % accurate calliper placement, determined by review of static image		≥ 98%	100%
		Use and maintenance of appropriate equipment	4.3.(a) regular calibration of equipment according to supplier recommendations ( <i>external QA assessment</i> )		100%	100%
			4.3.(b) routine maintenance of equipment according to supplier recommendations ( <i>external QA assessment</i> )		100%	100%
		Detection rate	4.4.(a) % of <u>men aged 65</u> with aorta ≥3cm on initial scan		2.5% to 5%	



Theme	Objective	Criteria	Metric	unsafe	acceptable	achievable
			4.4.(b) % of subjects with aorta $\geq 5.5$ cm, subsequently confirmed by diagnostic imaging		$\geq 95\%$	$\geq 98\%$
		False negative rate	4.5. % mortality due to ruptured aneurysm within 3 years of a screen negative result	$> 0.1\%$	$\leq 0.05\%$	$\leq 0.03\%$
		Variability of screening results	4.6.(a) greatest inter-observer variability (i.e. same subject, same screening episode, different screener)		$\leq 3$ mm	$\leq 2$ mm
			4.6.(b) greatest intra-observer variability (i.e. same subject, same screening episode, same screener)		$\leq 3$ mm	$\leq 2$ mm
		Timely availability of results	4.7.(a) % results communicated to subject on same day		$\geq 95\%$	$\geq 99\%$
			4.7.(b) % results communicated to subject and GP within 4 weeks		$\geq 99\%$	100%
5. Minimise harm	To minimise potential harms from screening	Quality of scan	5.1. % screening encounters where aorta could not be visualised		$\leq 3\%$	$\leq 1\%$
		Appropriately trained professionals to give/discuss results	5.2. % positive response to patient satisfaction survey (external QA assessment)		$\geq 50\%$	$\geq 70\%$
		Timely referral	5.3. % of subjects with AAA $\geq 5.5$ cm referred within one working day	$< 90\%$	$\geq 95\%$	$\geq 97\%$
		Minimal rupture between detection and referral to Vascular specialist	5.4. % of subjects with ruptured aneurysm between first screen positive and referral	$> 5\%$	$\leq 3\%$	$\leq 1\%$



Theme	Objective	Criteria	Metric	unsafe	acceptable	achievable
6. Diagnose	To ensure accurate diagnosis	Accuracy of diagnosis (true positive rate); reduction in inappropriate referrals	6.1. % of those subjects who have received confirmatory CT or MRI scan found to have AAA $\geq 5.5\text{cm}$		$\geq 97\%$	$\geq 99\%$
7. Treat/intervene	To ensure high quality and timely intervention	Timely treatment/intervention by specialist, measured from first positive scan  (accounting for holiday, sickness etc)	7.1.(a) % of subjects with AAA $\geq 5.5\text{cm}$ seen by vascular specialist within two weeks	< 50%	$\geq 75\%$	$\geq 95\%$
			7.1.(b) % of subjects with AAA $\geq 5.5\text{cm}$ seen by vascular specialist within eight weeks	< 90%	$\geq 95\%$	100%
			7.1.(c) % of subjects with AAA $\geq 5.5\text{cm}$ deemed fit for intervention operated on by vascular specialist within eight weeks		$\geq 60\%$	$\geq 80\%$
			7.1.(d) % of subjects deemed fit for intervention at first assessment post referral		$\geq 80\%$	$\geq 90\%$
		Operative procedures outside referral criteria from screening programme	7.2. % of operative procedures on AAA $< 5.5\text{cm}$ at last ultrasound		$\leq 5\%$	$\leq 3\%$
8. Outcome	To optimise public health outcomes in target population	Post-operative mortality  (assessed annually)	8.1.(a) 30-day mortality following elective AAA surgery (over most recent 100 cases submitted by vascular network)	> 10%	$\leq 8\%$	$\leq 6\%$
			8.1.(b) one year any cause mortality following elective surgery		$\leq 25\%$	$\leq 15\%$
			8.1.(c) % AAA related mortality after elective AAA surgery (after one year)			$\leq 10\%$



Theme	Objective	Criteria	Metric	unsafe	acceptable	achievable
		Accurate assessment of outcomes	8.2.(a) % of screen referred cases submitted data to National Vascular Database		≥ 95%	100%
			8.2.(b) % incomplete screening episodes		≤ 5%	≤ 2%
			8.2.(c) % of readmissions for aneurysm related complications within 12 months	> 30%	≤ 20%	≤ 10%
9. Staff	To ensure that whole screening programme is provided by a trained and competent workforce	Staff accreditation, ongoing Continuing Professional Development (CPD) and External Quality Assurance tests  (programme team to include programme director, co-ordinators, screeners, surgeons, radiologists)	9.1. % of screeners with appropriate training certificates		100%	100%
			9.2. % of programme team having read and understood the requirement for confidentiality		100%	100%
			9.3. % of programme team with CPD records updated within the last year		100%	100%
			9.4. % of programme team with Personal Development Plan updated within the last year		100%	100%
			9.5. % of programme team having appraisal within the last year		100%	100%
10. Commissioning and governance	To ensure effective commissioning and good governance of the screening programme	Programme size	10.1. General population in programme area	< 500,000	≥ 800,000	800,000 – 1.2 million
		Programme team meetings (programme team to include programme director, co-ordinators, screeners, surgeons, radiologists)	10.2. Programme team to meet at least once every two months		yes	yes



Theme	Objective	Criteria	Metric	unsafe	acceptable	achievable
		Clinical Multi-Disciplinary Team meetings	10.3. Vascular network clinical team to discuss all <u>screen positives</u> and clinically significant findings		yes	yes
		Participation in External Quality Assurance [visits, audits, tests etc]	10.4. Programme to participate in External Quality Assurance ( <i>external QA assessment</i> )		yes	yes
		Appropriate and reliable failsafe / incident management processes	10.5. Ongoing failsafe and incident management programme ( <i>external QA assessment</i> )		yes	yes
		Commissioning and performance management	10.6. Formal commissioning and performance management arrangements with service user involvement ( <i>external QA assessment</i> )		yes	yes
		Annual report	10.7. Production of annual report by 31 August for preceding financial year		yes	yes



## Glossary of definitions

A broken underline indicates that a term is used according to its definition in this glossary. Where terms from the glossary are used without a broken underline, their common English meaning can be assumed. Except where context determines otherwise, definitions include all forms of the defined term; so tested and testing refer to the definition of test.

Term	Definition
accept	A response to an <u>offer</u> which indicates that a screening <u>subject</u> is willing to proceed with a <u>screening encounter</u> .  <u>Acceptance</u> may be inferred from conduct provided that an <u>offer</u> has been made.
acceptance of offer	The proportion of those <u>offered</u> screening who <u>accept</u> the <u>offer</u> .  Low <u>acceptance of offer</u> might indicate that: i) the offer is not being <u>communicated</u> or delivered effectively (no response); and/or ii) screening is not deemed necessary or desirable by an entitled population (declined)
affected case	An individual in whom the condition being screened for is present.
communication	An interchange that the <u>subject</u> is capable of understanding and acting upon.
completeness of offer	The proportion of those <u>eligible</u> for screening who are <u>offered</u> screening.  <u>Completeness of offer</u> is a measure of how effectively a programme offers screening to the <u>eligible</u> population.
coverage	The proportion of those <u>eligible</u> for screening who are <u>tested</u> .  <u>Coverage</u> is a measure of the delivery of timely screening to an <u>eligible</u> population. Low <u>coverage</u> might indicate that: i) not all <u>eligible</u> people have been <u>offered</u> screening; ii) those <u>offered</u> screening are not <u>accepting</u> the test; and/or iii) those <u>accepting</u> the test are not being <u>tested</u> .
decline	A response to an <u>offer</u> which indicates that a screening subject does not wish to proceed with a <u>screening encounter</u> .
diagnosis	A diagnostic process following a <u>screen positive result</u> to determine whether the <u>subject</u> is an <u>affected case</u> .



effective timeframe	<p>The period of time within which a screening <u>test</u> can be delivered such that a reliable <u>result</u> is most likely to be obtained.</p> <p>The <u>effective timeframe</u> for a <u>test</u> is usually specified in the policy / guidance for the relevant screening programme.</p>
eligible	<p>The population that is entitled to an <u>offer</u> of screening.</p> <p>The criteria for <u>eligibility</u> may be administrative, demographic, clinical, or any combination of these, and may take into account individual circumstances such as time of <u>presentation</u> to the screening service.</p> <p><i>The <u>eligibility criteria</u> for AAA screening are:</i></p> <ol style="list-style-type: none"> <li>1. living; and</li> <li>2. male; and</li> <li>3. not excluded from screening in accordance with national guidance; and</li> <li>4. attaining the age of 65 within the current screening year.</li> </ol> <p>Note that surveillance patients and self-referred patients fall outside this definition of eligible; quality standards should be measured separately for each of these groups. Where performance management thresholds differ for subjects under surveillance following a previous <u>screen positive</u>, the surveillance thresholds are highlighted.</p>
failed offer	<p>Any indication that an attempted <u>offer</u> failed, such as a Post Office return.</p> <p>An offer will be deemed as a <u>failed offer</u> if:</p> <ol style="list-style-type: none"> <li>i) it did not reach the <u>subject</u>;</li> <li>ii) the <u>subject</u> was not capable of understanding or acting upon it;</li> <li>iii) the screening service lacked the capacity to <u>realise</u> it; and/or</li> <li>iv) it did not offer an opportunity of <u>testing</u> within an <u>effective timeframe</u>.</li> </ol>
false negative	A <u>screen negative result</u> in an <u>affected case</u> .
false positive	A <u>screen positive result</u> for a <u>subject</u> in whom the condition being screened for is absent.
general population	<p>The overall population of the geographic area for which a screening service is responsible.</p> <p>The boundaries of a screening service, and thus the <u>general population</u> for which it is responsible, are usually defined by a list of General Practices. The <u>total population</u> will be identified from patients registered with any of the General Practices within the <u>general population</u>.</p>



offer	<p>A formal <u>communication</u> made by the screening service, giving a specific <u>subject</u> a <u>realisable</u> opportunity to be <u>tested</u> within an <u>effective timeframe</u>.</p> <p>An offer or invitation will only count as an <u>offer</u> if:</p> <ul style="list-style-type: none"> <li>i) it reaches the <u>subject</u>;</li> <li>ii) the <u>subject</u> is capable of understanding and acting upon it;</li> <li>iii) the screening service has the capacity to <u>realise</u> it; and</li> <li>iv) it offers an opportunity of <u>testing</u> within an <u>effective timeframe</u>.</li> </ul>
presentation	The first attendance of a screening <u>subject</u> for a <u>screening encounter</u> .
realisable	Capable of being acted upon, concluded or delivered.
refer	<p>The process of securing further diagnosis / specialist assessment following a <u>screen positive test</u>.</p> <p>The date of referral is the first <u>realisable</u> assessment date offered by an appropriate specialist unit to a screening <u>subject</u> following a <u>screen positive result</u>. Allocation to a pending list or a <u>referral</u> subsequently cancelled by the specialist unit is not a <u>referral</u>.</p>
result	<p>A formal and completed assessment of the risk of a condition being screened for in a <u>subject</u>, following a <u>screening encounter</u>.</p> <p>Usually a <u>result</u> will be <u>screen positive</u> or <u>screen negative</u>. Insufficient and unassessable indicate a failure to obtain a <u>result</u>, and are not themselves <u>results</u>.</p>
screen negative	An indication following a <u>test</u> that the condition being screened for is low-risk / not suspected in a <u>subject</u> .
screen positive	<p>An indication following a <u>test</u> that the condition being screened is high-risk / suspected in a <u>subject</u>.</p> <p><i>A <u>screen positive</u> in AAA screening is a maximum antero-posterior aortic diameter of greater than or equal to 3.0cm, measured across the interior lumen.</i></p>
screeener	A healthcare professional responsible for administering screening <u>tests</u> .
screening encounter	<p>The provision of screening to a screening <u>subject</u>, usually through a process such as a scan or the collection of a sample.</p> <p>A <u>screening encounter</u> is usually characterised by contact between the screening <u>subject</u> and a healthcare professional, but some screening may be self-administered.</p>



screening episode	<p>The end-to-end screening process from the perspective of a <u>subject</u> who has <u>accepted</u> an <u>offer</u> of screening.</p> <p>A complete <u>screening episode</u> starts with <u>acceptance</u> of an <u>offer</u> and ends with the <u>communication</u> of a <u>conclusive result</u>. Some screening episodes may end prematurely, for example if the <u>subject</u> fails to attend a booked <u>screening encounter</u>.</p>
subject	An <u>eligible</u> individual.
subject record	The personal information stored on the programme database about a <u>subject</u> .
test	A <u>screening encounter</u> leading to the determination of a <u>conclusive result</u> .
total population	<p>The population that meets the general criteria for inclusion within a screening programme.</p> <p>The criteria for inclusion within a screening programme may be administrative, demographic, clinical, or any combination of these. Not everyone in the <u>total population</u> is likely to be <u>eligible</u> for screening (for example, those who <u>present</u> later than it would be possible to <u>test</u>).</p>
true positive	A <u>screen positive result</u> in an <u>affected case</u> .
uptake	<p>The proportion of those <u>offered</u> screening who are <u>tested</u>.</p> <p><u>Uptake</u> is a measure of the delivery of screening in the population to which it is <u>offered</u>. Low <u>uptake</u> might indicate that:</p> <ul style="list-style-type: none"> <li>i) those <u>offered</u> screening are not <u>accepting</u> the test; and/or</li> <li>ii) those <u>accepting</u> the test are not being <u>tested</u>.</li> </ul>



Figure 1: generic screening pathway, coverage and uptake

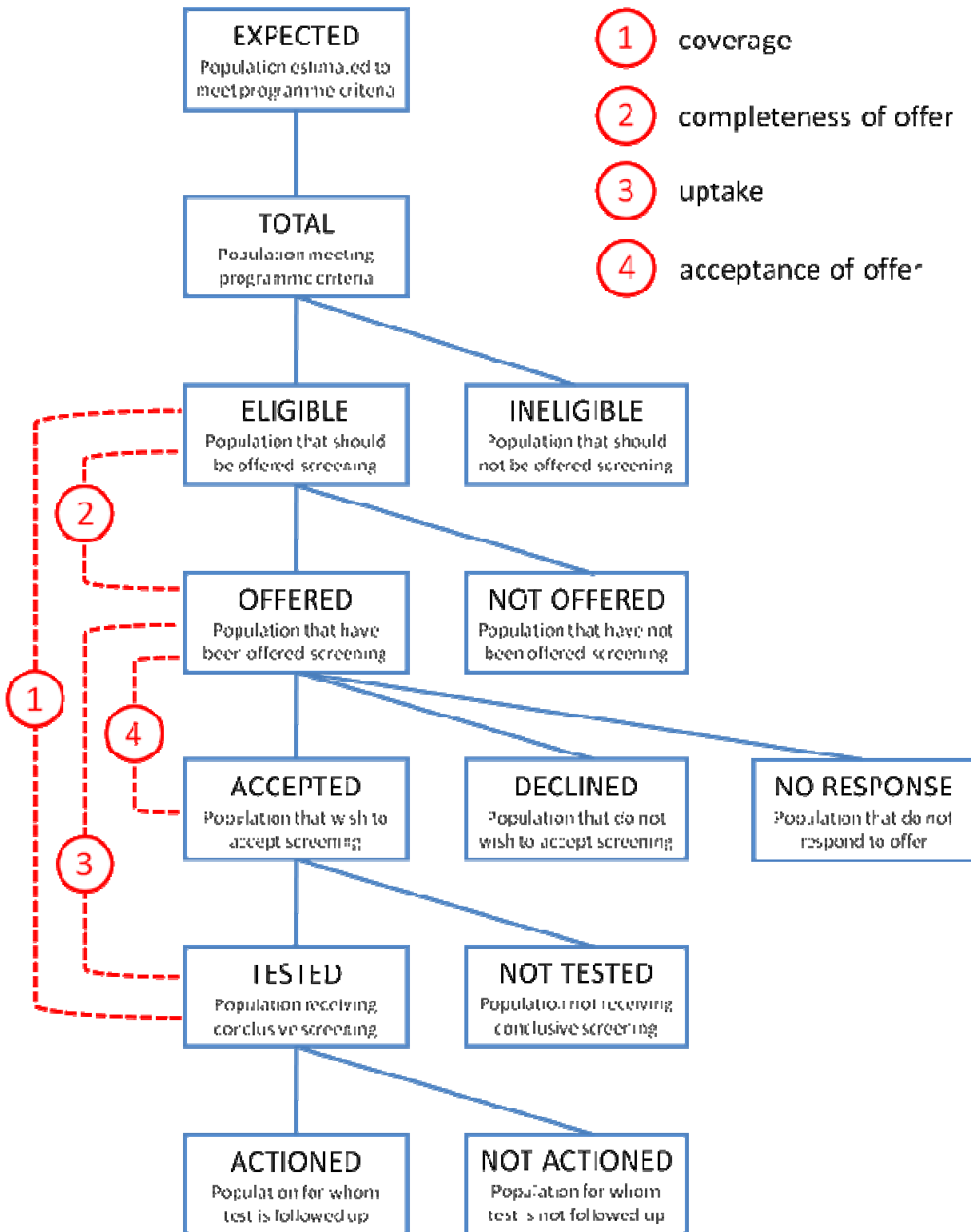


Figure 2: illustration of performance management thresholds and associated actions

