Peripheral arterial disease

NICE quality standard

Draft for consultation

August 2013

This quality standard covers the diagnosis and management of lower limb peripheral arterial disease in adults aged 18 years and over. It does not cover acute ischaemia of the lower limb. For more information, see the topic overview.

Why this quality standard is needed

Peripheral arterial disease (PAD) is a condition in which the arteries that carry blood to the limbs are narrowed or blocked, most often because of atherosclerosis.

The most common initial symptom of PAD is leg pain (usually in the calf) while walking. This is known as intermittent claudication. In most people with intermittent claudication, the symptoms remain stable but approximately 20% of people will develop increasingly severe symptoms leading to the development of critical limb ischaemia. Critical limb ischaemia is characterised by severely diminished circulation, ischaemic pain, ulceration, tissue loss and/or gangrene. Overall, approximately 1–2% of people with intermittent claudication will eventually undergo lower limb amputation, although the risk is higher (about 5%) in people with diabetes.

The incidence of PAD increases with age and about 20% of people over 60 years have evidence of PAD on clinical examination. Smoking is the most important risk factor for PAD; other risk factors include diabetes, high cholesterol and high blood pressure.

PAD is also a marker for an increased risk (3–4 fold) of cardiovascular morbidity (heart attack and ischaemic stroke) and mortality, even while it is asymptomatic. Symptomatic PAD significantly impairs quality of life through reduced mobility, severe pain, ulceration and gangrene. It is the largest single cause of lower limb amputation in the UK.

How this quality standard supports delivery of outcome frameworks

NICE quality standards describe high-priority areas for quality improvement in a defined care or service area. Each standard consists of a prioritised set of specific, concise and measurable statements. They draw on existing guidance, which provides an underpinning, comprehensive set of recommendations, and are designed to support the measurement of improvement. This quality standard, in conjunction with the guidance on which it is based, should contribute to the improvements outlined in the following 2 outcomes frameworks published by the Department of Health:

- NHS Outcomes Framework 2013/14
- Improving outcomes and supporting transparency: a public health outcomes framework for England 2013–2016, Part 1 and Part 1A.

Tables 1 and 2 show the outcomes, overarching indicators and improvement areas from the frameworks that the quality standard could contribute to achieving.

Table 1 NHS Outcomes Framework 2013/14

Domain	Overarching indicators and improvement areas
1 Preventing people from dying prematurely	***Overarching indicator*** 1a Potential years of life lost (PYLL) from causes considered amenable to healthcare i) Adults ***Improvement areas*** **Reducing premature mortality from the major causes of death** 1.1 Under 75 mortality rate from cardiovascular disease*
2 Enhancing quality of life for people with long-term conditions	***Overarching indicator*** 2 Health-related quality of life for people with long-term conditions** ***Improvement areas*** **Ensuring people feel supported to manage their condition** 2.1 Proportion of people feeling supported to manage their condition**
4 Ensuring that people have a positive experience of care	***Overarching indicators*** 4a Patient experience of primary care i) GP services 4b Patient experience of hospital care
Alignment across the health and social care system * Indicator shared with Public Health Outcomes Framework (PHOF) ** Indicator complementary with Adult Social Care Outcomes Framework (ASCOF)	

Table 2 Public health outcomes framework for England, 2013–2016

Domain	Objectives and indicators
4 Healthcare public health and preventing premature mortality	***Objective*** Reduced numbers of people living with preventable ill health and people dying prematurely, while reducing the gap between communities ***Indicator*** 4.4 Mortality from all cardiovascular diseases (including heart disease and stroke)*
Alignment across the health and social care system * Indicator shared with NHS Outcomes Framework	

Coordinated services

The quality standard for PAD specifies that services should be commissioned from and coordinated across all relevant agencies encompassing the whole PAD care pathway. A person-centred, integrated approach to providing services is fundamental to delivering high-quality care to people with PAD.

The Health and Social Care Act 2012 sets out a clear expectation that the care system should consider NICE quality standards in planning and delivering services, as part of a general duty to secure continuous improvement in quality. Commissioners and providers of health and social care should refer to the library of NICE quality standards when designing high-quality services. Other quality standards that should also be considered when choosing, commissioning or providing a high-quality PAD service are listed in related quality standards.

Training and competencies

The quality standard should be read in the context of national and local guidelines on training and competencies. All health and social care practitioners involved in assessing, caring for and treating people with PAD should have sufficient and appropriate training and competencies to deliver the actions and interventions described in the quality standard.

List of quality statements

Statement 1. People with suspected peripheral arterial disease (PAD) are offered an assessment.

Statement 2. People with intermittent claudication are offered a supervised exercise programme.

Statement 3. People with peripheral arterial disease (PAD) being considered for revascularisation are offered appropriate imaging.

Statement 4. People with intermittent claudication are offered angioplasty in accordance with NICE guidance.

Questions for consultation

Questions about the quality standard

Question 1 Does this draft quality standard accurately reflect the key areas for quality improvement?

Question 2 If the systems and structures were available, do you think it would be possible to collect the data for the proposed quality measures?

Questions about the individual quality statements

Question 3 For draft quality statement 1: Is it clear that there are two quality improvement areas addressed in this statement, identifying people who should have an assessment and ensuring the assessment is high quality?

Quality statement 1: Identifying people with peripheral arterial disease

Quality statement

People with suspected peripheral arterial disease (PAD) are offered an assessment.

Rationale

Many people with PAD will have no symptoms whilst other people will develop symptoms suggestive of PAD. Early identification of PAD means that people will be treated earlier, aiming to slow disease progression and improve quality of life through better mobility and reduced pain. Early identification may also reduce the risk of cardiovascular morbidity and mortality, and the need for lower limb amputation. A high quality assessment including measuring the ankle brachial pressure index with a doppler ultrasound ensures an accurate diagnosis can be made.

Quality measures

Structure

a) Evidence of local arrangements to ensure that health and social care practitioners receive training to recognise the symptoms suggestive of PAD.

Data source: Local data collection.

b) Evidence of local arrangements to ensure that people with suspected PAD are offered an assessment.

Data source: Local data collection.

c) Evidence of local arrangements to ensure that all healthcare practitioners undertaking hand-held doppler ultrasound assessment of ankle brachial pressure index are appropriately trained.

Data source: Local data collection.

Process

a) Proportion of people with symptoms suggestive of PAD who receive an assessment.

Numerator – the number of people in the denominator receiving an assessment.

Denominator – the number of people with symptoms suggestive of PAD.

Data source: Local data collection.

b) Proportion of people receiving interventions to the leg or foot who receive an assessment.

Numerator – the number of people in the denominator receiving an assessment

Denominator – the number of people receiving interventions to the leg or foot.

Data source: Local data collection.

c) Proportion of people using compression hosiery who receive an assessment.

Numerator – the number of people in the denominator receiving an assessment.

Denominator – the number of people using compression hosiery.

Data source: Local data collection.

Outcome

a) Time to diagnosis.

Data source: Local data collection.

b) Incidence of intermittent claudication.

Data source: Local data collection.

c) Incidence of critical limb ischaemia.

Data source: Local data collection.

What the quality statement means for service providers, health and social care practitioners, and commissioners

Service providers ensure that people with suspected PAD are offered an assessment.

Health and social care practitioners ensure that they offer people with suspected PAD an assessment.

Commissioners ensure that they commission services so that people with suspected PAD are offered an assessment.

What the quality statement means for patients, service users and carers

People who are checked for peripheral arterial disease receive a thorough assessment to find out whether or not they have it, in which they are asked about their symptoms, their legs and feet are examined, their pulses are checked, and the blood pressure in their arms and ankles compared.

Source guidance

- Lower limb peripheral arterial disease (NICE clinical guideline 147), recommendations 1.3.1 and 1.3.2 (key priorities for implementation).

Definitions of terms used in this quality statement

People with suspected PAD include those who:

- have symptoms suggestive of PAD **or**
- have diabetes, non-healing wounds on the legs or feet or unexplained leg pain **or**
- are being considered for interventions to the leg or foot, for example, podiatric and orthopaedic foot surgery and chiropody **or**
- need to use compression hosiery.

Symptoms suggestive of PAD include:

- pain in the leg when walking (intermittent claudication)
- pain in the foot at rest, often made worse by elevation (for example, in bed at night disturbing sleep and relieved by hanging the foot down)
- tissue loss (ulceration and/or gangrene)

- diabetes with non-healing wounds on the legs or feet or unexplained leg pain.

An assessment should include:

- asking about the presence and severity of possible symptoms of intermittent claudication and critical limb ischaemia
- examining the legs and feet for evidence of critical limb ischaemia, for example, ulceration and/or gangrene
- examining the femoral, popliteal and foot pulses
- measuring the ankle brachial pressure index (recommendation 1.3.3 in NICE guideline 147 provides guidance on how this should be done)

Question for consultation

Is it clear that there are two quality improvement areas addressed in this statement, identifying people who should have an assessment and ensuring the assessment is high quality?

Quality statement 2: Supervised exercise programmes

Quality statement

People with intermittent claudication are offered a supervised exercise programme.

Rationale

Supervised exercise programmes can improve walking distance and quality of life for people with intermittent claudication. However, the provision of services varies across the country.

Quality measures

Structure

a) Evidence of local arrangements to ensure the availability of supervised exercise programmes.

Data source: Local data collection.

b) Evidence of local arrangements to ensure that people with intermittent claudication are offered a supervised exercise programme.

Data source: Local data collection.

Process

a) Proportion of people with intermittent claudication who are offered a supervised exercise programme.

Numerator – the number of people in the denominator offered a supervised exercise programme.

Denominator – the number of people with intermittent claudication.

Data source: Local data collection. Contained within NICE clinical guideline 147 audit support – imaging and supervised exercise programmes: audit standard 3.

b) Proportion of people with intermittent claudication who start a supervised exercise programme.

Numerator – the number of people in the denominator starting a supervised exercise programme.

Denominator – the number of people with intermittent claudication offered a supervised exercise programme.

Data source: Local data collection.

c) Proportion of people with intermittent claudication who complete a supervised exercise programme.

Numerator – the number of people in the denominator completing a supervised exercise programme.

Denominator – the number of people with intermittent claudication who start a supervised exercise programme.

Data source: Local data collection.

Outcome

a) Improvements in walking distance.

Data source: Local data collection.

b) Improvements in quality of life.

Data source: Local data collection.

What the quality statement means for service providers, healthcare practitioners, and commissioners

Service providers ensure that systems are in place for people with intermittent claudication to be offered a supervised exercise programme.

Healthcare practitioners ensure that they offer supervised exercise programmes to people with intermittent claudication.

Commissioners ensure that they commission supervised exercise programmes to be offered to people with intermittent claudication.

What the quality statement means for patients, service users and carers

People who have pain when walking because of poor circulation are offered a group-based supervised exercise programme to gradually build up their strength.

Source guidance

- Lower limb peripheral arterial disease (NICE clinical guideline 147), recommendation 1.5.1 (key priority for implementation) and 1.5.2.

Definitions of terms used in this quality statement

Intermittent claudication is defined as a walking- or exercise-induced pain in the lower limbs caused by diminished circulation.

Supervised exercise programmes may involve the following components:

- 2 hours of supervised exercise a week for a 3-month period
- encouraging people to exercise to the point of maximal pain.

Quality statement 3: Imaging

Quality statement

People with peripheral arterial disease (PAD) being considered for revascularisation are offered appropriate imaging.

Rationale

Imaging should only be performed if it is likely to provide information that would influence the management of PAD, and in all cases if revascularisation is being considered. Imaging using duplex ultrasound or contrast-enhanced magnetic resonance angiography offers accurate assessment without the use of ionising radiation, but local training and expertise and the availability of imaging equipment may be variable.

Quality measures

Structure

a) Evidence of local arrangements to ensure that healthcare professionals are appropriately trained in the use of imaging equipment.

Data source: Local data collection.

b) Evidence of local arrangements to ensure that people with PAD being considered for revascularisation are offered imaging.

Data source: Local data collection.

Process

a) Proportion of people with PAD being considered for revascularisation who receive duplex ultrasound as first-line imaging.

Numerator – the number of people in the denominator receiving duplex ultrasound as first-line imaging.

Denominator – the number of people with PAD being considered for revascularisation.

Data source: Local data collection. Contained within NICE clinical guideline 147 audit support – imaging and supervised exercise programmes: audit standard 1.

b) Proportion of people with PAD being considered for revascularisation needing further imaging who receive magnetic resonance angiography.

Numerator – the number of people in the denominator receiving magnetic resonance angiography.

Denominator – the number of people with PAD being considered for revascularisation who need further imaging.

Data source: Local data collection. Contained within NICE clinical guideline 147 audit support – imaging and supervised exercise programmes: audit standard 2.

What the quality statement means for service providers, healthcare practitioners, and commissioners

Service providers ensure that systems are in place for people with PAD who are being considered for revascularisation to be offered imaging (duplex ultrasound as first-line and contrast-enhanced magnetic resonance angiography if further imaging is needed).

Healthcare practitioners ensure that they offer people with PAD who are being considered for revascularisation imaging (duplex ultrasound as first-line and contrast-enhanced magnetic resonance angiography if further imaging is needed).

Commissioners ensure that they commission services that offer people with PAD being considered for revascularisation imaging (duplex ultrasound as first-line and contrast-enhanced magnetic resonance angiography if further imaging is needed).

What the quality statement means for patients, service users and carers

People with peripheral arterial disease whose healthcare professionals think surgery could help, are offered imaging tests (for example, an ultrasound) to see whether surgery would be suitable.

Source guidance

- Lower limb peripheral arterial disease (NICE clinical guideline 147), recommendations 1.4.1, 1.4.2 (key priority for implementation) and 1.4.3.

Definitions of terms used in this quality statement

Revascularisation is any procedure that is used to restore blood flow to an area of the body that is supplied by narrowed or blocked arteries. This can be done either by making the narrowed arteries wider (angioplasty), or by using another blood vessel to bypass the blocked or narrowed artery (bypass surgery).

People being considered for revascularisation include those:

- with intermittent claudication, who should be offered angioplasty only when:
  - advice on the benefits of modifying risk factors has been reinforced (see recommendation 1.2.1) **and**
  - a supervised exercise programme has not led to a satisfactory improvement in symptoms **and**
  - imaging has confirmed that angioplasty is suitable for the person
- being considered for primary stent placement, for treating people with intermittent claudication caused by complete aorto-iliac occlusion (rather than stenosis)
- with critical limb ischaemia who need revascularisation, who should be offered angioplasty or bypass surgery, taking into account factors including:
  - comorbidities
  - pattern of disease
  - availability of a vein
  - patient preference.
- being considered for primary stent placement, for treating people with critical limb ischaemia caused by complete aorto-iliac occlusion (rather than stenosis).

Appropriate imaging refers to duplex ultrasound as first-line imaging and contrast enhanced magnetic resonance angiography if further imaging is needed.

Quality statement 4: Angioplasty for intermittent claudication

Quality statement

People with intermittent claudication are offered angioplasty in accordance with NICE guidance.

Rationale

Angioplasty can be used to treat intermittent claudication, but as it is an invasive procedure, it should only be used after non-invasive options (including reinforcement of the importance of lifestyle changes and participation in supervised exercise programmes) have been explored, and imaging has confirmed that angioplasty is suitable. Greater use of non-invasive treatments may reduce the need for angioplasty.

Quality measures

Structure

Evidence of local arrangements to ensure that people with intermittent claudication are offered angioplasty in accordance with NICE guidance.

Data source: Local data collection.

Process

Proportion of people with intermittent claudication receiving angioplasty in accordance with NICE guidance.

Numerator – the number in the denominator who met the criteria for angioplasty.

Denominator – the number of people with intermittent claudication who receive angioplasty.

Data source: Local data collection.

What the quality statement means for service providers, healthcare practitioners, and commissioners

Service providers ensure that systems are in place for people with intermittent claudication to be offered angioplasty in accordance with NICE guidance.

Healthcare practitioners offer angioplasty to people with intermittent claudication in accordance with NICE guidance.

Commissioners ensure that they commission services for people with intermittent claudication to be offered angioplasty in accordance with NICE guidance.

What the quality statement means for patients, service users and carers

People who have pain when walking because of poor circulation are offered angioplasty (a procedure in which a small balloon is inserted into the narrowed artery and inflated to widen the artery) only after receiving advice on the risk factors of PAD, when a supervised exercise programme has not improved symptoms and when imaging has confirmed angioplasty is suitable.

Source guidance

- Lower limb peripheral arterial disease (NICE clinical guideline 147), recommendation 1.5.3.

Definitions of terms used in this quality statement

Intermittent claudication is defined as a walking- or exercise-induced pain in the lower limbs caused by diminished circulation.

Criteria for angioplasty as in the NICE guidance include:

- advice on benefits of modifying risk factors has been reinforced **and**
- a supervised exercise programme has not led to a satisfactory improvement in symptoms **and**
- imaging has confirmed that angioplasty is suitable for the person.

Equality and diversity considerations

Angioplasty may not be suitable for everyone. It may be contraindicated in, or declined by, some people.

Status of this quality standard

This is the draft quality standard released for consultation from 6 August to 4 September 2013. It is not NICE's final quality standard on peripheral arterial disease. The statements and measures presented in this document are provisional and may change after consultation with stakeholders.

Comments on the content of the draft standard must be submitted by 5pm on 4 September 2013. All eligible comments received during consultation will be reviewed by the Quality Standards Advisory Committee and the quality statements and measures will be refined in line with the Quality Standards Advisory Committee's considerations. The final quality standard will be available on the NICE website from February 2014.

Using the quality standard

Quality measures

The quality measures accompanying the quality statements aim to improve the structure, process and outcomes of care in areas identified as needing quality improvement. They are not a new set of targets or mandatory indicators for performance management.

We have indicated if current national indicators exist that could be used to measure the quality statements. These include indicators developed by the Health and Social Care Information Centre through its Indicators for Quality Improvement Programme. If there is no national indicator that could be used to measure a quality statement, the quality measure should form the basis for audit criteria developed and used locally.

See NICE's What makes up a NICE quality standard? for further information, including advice on using quality measures.

Levels of achievement

Expected levels of achievement for quality measures are not specified. Quality standards are intended to drive up the quality of care, and so achievement levels of 100% should be aspired to (or 0% if the quality statement states that something should not be done). However, NICE recognises that this may not always be

appropriate in practice, taking account of safety, choice and professional judgement, and therefore desired levels of achievement should be defined locally.

Using other national guidance and policy documents

Other national guidance and current policy documents have been referenced during the development of this quality standard. It is important that the quality standard is considered by commissioners, providers, health and social care practitioners, patients, service users and carers alongside the documents listed in Development sources.

Diversity, equality and language

During the development of this quality standard, equality issues have been considered and equality assessments are available.

Good communication between health and social care practitioners and people with PAD is essential. Treatment, care and support, and the information given about it, should be culturally appropriate. It should also be accessible to people with additional needs such as physical, sensory or learning disabilities, and to people who do not speak or read English. People with PAD should have access to an interpreter or advocate if needed.

Commissioners and providers should aim to achieve the quality standard in their local context, in light of their duties to have due regard to the need to eliminate unlawful discrimination, advance equality of opportunity and foster good relations. Nothing in this quality standard should be interpreted in a way that would be inconsistent with compliance with those duties.

Development sources

Further explanation of the methodology used can be found in the quality standards Process guide on the NICE website.

Evidence sources

The documents below contain recommendations from NICE guidance or other NICE-accredited recommendations that were used by the Quality Standards Advisory Committee to develop the quality standard statements and measures.

- Lower limb peripheral arterial disease. NICE clinical guideline 147 (2012).

Policy context

It is important that the quality standard is considered alongside current policy documents, including:

- Department of Health (2013) Cardiovascular Disease Outcomes Strategy: improving outcomes for people with or at risk of cardiovascular disease.
- NHS Wales (2009) Cardiac Disease National Service Framework for Wales.
- Quality and Outcomes Framework (2013/14).

Related NICE quality standards

Published

- Hypertension. NICE quality standard 28 (2013).
- Patient experience in adult NHS services. NICE quality standard 15 (2012).
- Diabetes in adults. NICE quality standard 6 (2011).

In development

- Smoking cessation. Publication expected August 2013.

Future quality standards

This quality standard has been developed in the context of all quality standards referred to NICE, including the following topics scheduled for future development:

- Lipid modification.
- Obesity in adults.
- Physical activity.
- Risk assessment of modifiable cardiovascular risk factors.

Quality Standards Advisory Committee and NICE project team

Quality Standards Advisory Committee

This quality standard has been developed by Quality Standards Advisory Committee 2. For further information about the standing members of this committee, see the NICE website. The following specialist members joined the committee to develop this quality standard:

Prof Andrew Bradbury
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About this quality standard

NICE quality standards describe high-priority areas for quality improvement in a defined care or service area. Each standard consists of a prioritised set of specific, concise and measurable statements. NICE quality standards draw on existing NICE or NICE-accredited guidance that provides an underpinning, comprehensive set of recommendations, and are designed to support the measurement of improvement.

The methods and processes for developing NICE quality standards are described in the quality standards process guide.

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